## Make Amica music

BARS\&PIPES PROFESSIONAL 2 ir THE MOST POWERFUL MUSIC GIVEAWAY EVER TO GRACE A

 one music package,
complete and just rarin' to rock! soun ramor
sounoworss



FREE COMPLETE MUSIC PROGRAM

## REV/IEWED: PIPView O TOSMS Emplant O Blitz Basic 2 Real 3D v2

 HD Flop:y PIUS modem round-up

## STOP PRESS

Latest news on the Amiga 4000-030 shows demand outstripping supply world wide. If you are having problems getting stock or perhaps feel disappointed that you opted for the A1200 before you knew about the new machine all is not lost. Check out the table on the right showing the A1200 fitted with the new M1230XA Microbotics accelerator available from Indi from

Performance Comparison
Performance Index

# INDI DIRECT MAIL <br> Proudly Presents <br> THE JAKKI BRAMBLES COLUMN 

Hi,
It certainly doesn't seem a month ago that I last wrote for Indi and what a month it has been.
With immaculate timing Commodore announced their superb Amiga CD, are Sega and Nintendo worried?
Interesting question, 32 bit technology, 16.8 million colours and the amazing AA chip set: what do you think?
But, more to the point, what does it mean to you if you currently own or were thinking of buying an Amiga 600 or 1200. First of all let's be clear, you cannot use the Amiga CD as a computer until there is a keyboard and drive option (promised for 1994). So if you want to do any more than run CD software remember you will not have access to the vast range of floppy based software on Amiga nor the processing power that makes the Amiga so rewarding if you want to do more than games play.
So what does this mean to the current Amigas? To make it simple, the Amiga $\mathbf{6 0 0}$ is a cheap entry level system perfect for the first time user or those working to a budget. The Amiga 1200 is the elite system for the dedicated user who wants to access the speed and performance of this mid range system; you can upgrade later via an external CD solution promised to be hot on the heels of the Amiga CD.
The Amiga CD should be available to dedicated games players in August. Phone INDI to check for pricing and availability; and don't be confused, both the Amiga 600 and 1200 are around for some time. In fact Indi have already finalised their plans for Christmas!
Mail order purchasing can be worrying, sending your hard earned cash to a company that may be hundreds of miles away, will your dream machine arrive as promised and what do you do if it doesn't?
Indi is part of a very large company with their own in-house experts and systems and yet it still sometimes goes wrong. At Indi they have a Customer Care department who do nothing else but problem solve. So if Securicor couldn't find your house but will re-deliver tomorrow, or you cannot load a disk, they are there to help.
But what if the problem needs a fresh pair of eyes, perhaps you feel that you have been unsympathetically or unfairly treated?
I was delighted to learn that Indi take their responsibilities so seriously that they have joined the DMA.
The Direct Marketing Association is a very serious organisation (recognised by the Advertising Standards Association and other such official bodies).
Getting accepted is difficult, staying in required Indi to set and achieve real customer satisfaction and solve problems quickly if they occur.
I sincerely hope that all Mail Order Companies will follow Indi and display the DMA symbol on their advertising. If they don't you should ask them why not.
Regards,

# CUSTOMER CHARTER 

INDI Direct Mail is original and very exciting. Before you buy mail order you must first be confident that you will receive the product you've ordered and that the supplier will still be there in the future, should you need them.

A mail order purchase from INDI is a sate and secure decision, and here's why.
INDI is a wholly owned subsidiary of a public company now in its tenth year of trading and specialising in the supply of computer products.

With a turnover approaching £30 million per annum, we have the resources and the purchasing power to offer you the best deals, deliver them next day nationwide and always be
around when you need us.

## SALES AND SUPPORT

The INDI sales team have been trained to take your order with the utmost care and efficiency. All stock offered for sale is held in stock, centrally at our group warehouse complex and is available for next day delivery, direct to your home or business. If at any time we are out of stock your money will not be banked until the product is available
(a point worth checking should you feel tempted to purchase elsewhere).

General information regarding product is available from our sales team, however technical support is always at hand should you need assistance.

All prices quoted are inclusive of VAT.
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## CREDIT FACILITIES

INDI are now able to offer competitive credit facilities on all orders over $£ 200.00$. All credit facilities are subject to status and applicants must be over the age of 18 . If you would like a quote simply call our sales line where acceptance can normally be notified within the hour. We are also able to offer Credit Insurance to cover repayments in the event of sickness or unemployment.

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| 100 | ti0as | \$219\% | tis213 | 51891.12 | texs ${ }^{\text {d }}$ | tivisut |

APR $29.8 \%$ WRITTEN QUOTATIONS AVAILABLE ON REQUEST
-After deposit pald

DEFERRED CREDIT ON ALL ORDERS OVER £200. *PAY 10\% NOW AND NOTHING MORE FOR 3 MONTHS.


OFFICIAL A1200 HD SYSTEMS FREE
The Amiga 1200 supplied by INDI Direct Mail now includes the official (legal) Commodore installation disk and hard drive utility manual. Indi are proud to be an official supplier of Amiga 1200 Hard Drive systems, that include the official software, documentation and on - site warranty

COMIC RELIEF PACK.
The event may be over but the fund raising still goes on. If your looking for the latest in Amiga technology then this is the starter pack for you. Based around the outstanding A1200, this pack also gives you sleepwalker, a most addictive platform game from ocean software. You'll be pleased to know that every one of these packs purchased raises another $£ 10$ for Comic Relief.
A1200 STANDARD FEATURES.
68020 Processor. PCMCIA slot. - 2MB ChipRAM. $3.5^{\circ}$ Internal 68020 Processor. PCMCIA slot. $\quad$ AMB ChipRAM. $3.5^{\circ}$ Interna
Drive. Drive. 12 Months at home maintenance

## INDI PRICE

$£ 379.99$ or from $£ 14.47^{*}$ per month
*(Credit price based on 36 monthly payments APR 29.8\%.
Total repayment $£ 520.92$ and 90 day deferred payments.)
A1200 60 MEG HD INDI PRICE $£ 539.99$
A1200 80 MEG HD
A1200120 MEG HD
INDI PRICE $£ 599.99$
INDI PRICE $£ 679.99$
INDI A1200 ACCESSORY PACK
Pack Contains:

- 3 Superb Games - International Games Challenge - The Cool Croc - Paradroid 90 - Zapsac and Zappo T- shirt

INDI PRICE £19.99
60/80 Hard Disk upgrades available on any A1200. Upgrade includes full Wang warranty on A1200 and Hard disks. Phone for a quote.

## AMIGA A4000

## NEW MONITOR RANGE

THE NEW DUAL SYNC 1940/ 1942 Monitors have been specially designed for the New Amiga 1200 and 4000 computers. Both monitors feature built - in stereo speakers.
The NEW Amiga 40001030 features a EC68030 processor running at an increcibile 25Mhz, and upgradable at a later date to a taster processor. The 4000030 has a powerful 4 Mb of 32 -bit RAM ( 2 Mb chip $\& 2 \mathrm{Mb}$ tast) expandable to 18 Mb using industry standard 32 - bit Simms module. In line with the Amiga flagship 4000040 the 4000030 features the new AGA graphics chipset giving you a massive pallet of 16.8 milion colours. A range of hard dive options are available form 80 -240 Mb and includes a SCSI option.

4000/030 80 Mb HD INDI PRICE $£ 939.99$ Other Drive Options
4000/030 120 Mb HD INDI PRICE £1039.99 $4000 / 030240 \mathrm{Mb}$ HD (exclusive to INDI) Phone for price
$4000 / 030120 \mathrm{Mb}$ SCSI HD (exclusive to INDI) Phone for price
A full range of approved upgrades are available for the 4000030 , Including additional memory modules, hard drives, PC bridge boards, FPU's ( 68881 \& 68882 ) and the 24 -bit Opal vision graphics and video system.

## INDI PRICE <br> 1940 Monitor $£ 279.99$ <br> 14 inch screen size -0.39 mm dot matrix.

## INDI PRICE

1942 Monitor $£ 379.99$
14 inch screen size -0.28 mm dot matrix.


## Parnet Adaptor for CDTV

Connect a CDTV Player to any Amiga, and access the world of CD - ROM software
The Parnet interface and software will allow the Amiga CDTV to be used as a CD - ROM drive with any Amiga and will give any Amiga owner access to the vast range of CDTV software currently available.
The CDTV player offers excellent value for money when compared with a standard CD - ROM drive and interface. Most CD - ROM drives will set you back over §400 while CDTV will cost you less than $£ 300$ and will play audio CD's in addition to CD - ROM / CDTV disk's The Parnet adaptor includes the software driver for your Amiga, interface cable and PD disk with driver software for your CDTV player

## INDI PRICE $£ 39.99$

A4000/030 PLUS CDTV + 1960 MONITOR.
INDI PRICE £1599.99
CDTV + PARNET.
INDI PRICE $£ 329.99$

## AMIGA A600 PRICE CRASH

A600-SD A single drive Amiga for those of you requiring a basic A600 at a very competitive price.
PACK INCLUDES: A600 single drive, built in TV modulator, 1 Mb memory. 12 Months at home service.
INDI VALUE ADDED FREE
Kick Off 2 Pipemania Space Ace Populous Microswitched joystick

## INDI PRICE E239-99

£189.99
A600 EPIC PACK ( 40 Mb HD) PACK INCLUDES:
A600 Hard Disks (20Mb) 1Mb Memory Epic Rome Myth Trivial Pursuit Amiga Text Deluxe Paint III 12 Months at home service. PLUS INDI ACCESSORIES PACK AS LISTED. COMES WITH AN EXTRA 512K RAM EXPANSION FREE.

## INDI PRICE £395.99

£339.99

## INDI A600 ACCESSORY PACK (Featured with WWW)

 Micro Switched Joystick Lockable Disk Box Disk Wallet - 10 Blank Disks Kick Off 2 - Pipemania Space AceTHE WILD, THE WEIRD AND THE WICKED A600 is an
ideal starter pack containing a considered mix of software, making the most of the Amigas amazing capabilities.

PACK CONTAINS:
A600 Single Drive
NEW

- Built in TV Modulator

1 Mb Memory LOW LOW

PRICES
E280.99
Pushover: Grandorix
£215.99

WANT THE BEST IN PROFESSIONAL AMIGA. WHY NOT TAKE ADVANTAGE OF THE CREDIT DEALS AVAILABLE (SUBJECT TO STATUS). CREDIT AVAILABLE ON 6, 12, 18, 24, 36 MONTHS. WHY NOT RING NOW FOR A QUOTE. SAME DAY RESPONSE.

## AMIGA RECOMMENDED PERIPHERALS \& ACCESSORIES

## New from Microbotics for the A1200!!!.

 M1230XA Accelerator launch!!Microbotics beats the competition on price, performance, features and configurations.INDI is very pleased to announce the availability of the new 68030 accelerator product for the A1200: the microbotics M1230 XA (call it the "XA" for short) 50 MHZ speed is standard! Memory management is standard! Huge 128 MB memory design is standard ( the biggest memory space on any A1200 peripheral) Just look at these specifications and prices!

M1230 XA W/40 MHZ EC 030 OMB INDI PRICE $£ 299.99$ M1230 XA W/40 MHZ EC 030 4MB INDI PRICE £399.99 M1230 XA W/50 MHZ MMU 030 OMB INDI PRICE £399.99 M1230 XA W/50 MHZ MMU 030 4MB INDI PRICE £499.99


## MBX1200.

The original and the best floating point unit and memory uppgrade for the Amiga A1200. Available with 0,4 OR 8 MB OF 32 BIT FAST RAM and a choice of floating point units. Now complete with real time clock (RTC)
MBX1200Z 6888114 MHZ OMB INDI PRICE $£ 129.9$ MBX1200Z 68881 14MHZ 4MB INDI PRICE $£ 249.9$ MBX1200Z 6888114 MHZ 8 MB INDI PRICE $£ 349.9$ MBX1200Z 6888225 MHZ OMB INDI PRICE $£ 189.9$ MBX1200Z 6888225 MHZ 4 MB INDI PRICE $£ 339.9$ MBX1200Z 6888225 MHZ 8MB INDI PRICE £409.9 MBX1200Z 6888250 MHZ 0 MB INDI PRICE $£ 339.9$ MBX1200Z 6888250 MHZ 4 MB INDI PRICE £419.9 MBX1200Z 6888250 MHZ 8MB INDI PRICE £539.9

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M501 The original 0.5 MB battery backed upgrade for the A500.
INOI PRICE $£ 29.99$
M502 The original 1 MB battery backed upgrade for the A500.
INDI PRICE $£ 49.99$
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Hard frame suitable for A1500/A2000. Allows for th interface of a SCSI hard drive. INDI PRICE $£ 110.99$


VIDI AMIGA 12. THE ultimate low cost colour digitiser for the Amiga. ${ }^{\text {.The best }}$ value full colour digitiser on the market ${ }^{-}$ AMIGA FORMAT.
INDI PRICE $£ 75.99$

TAKE 2. Animation package is a must for computer artists and enthusiasts of all ages. As used in Rolf Harris Cartoon Club. INDI PRICE. £37.99

DISK DRIVES.


You've seen all the reviews on this popular and affordable second Amiga drive. Compatible with all Amigas. INDI PRICE E59.99
"Quality: 9 out of 10 ." Exceptional value for money. AMIGA COMPUTING JAN 93


ROCTEC ROCGEN.
Entry level Genlock for all Amigas. Record stunning Amiga Graphics onto Standard video or overlay text and graphics onto a video signal.
INDI PRICE £69.99
ROCTEC ROCGEN PLUS.
As above but with extra features such as tinting and signal inversion. Allows for real time editing of graphics.
Compatible with all Amigas.
INDI PRICE £133.99

## ROCTEC ROCKEY.

The ultimate accessory for Amiga / video fans. Separate RGB controls to croma key on any colour
INDI PRICE £249.99

## PYRAMID SCANNER.

A total hand held scanning package for all Amigas complete with interface and software (mono)
INDI PRICE £99.99.
MONITORS.


1084ST MONITOR.
Commodores original and best selling colour stereo monitor. Now includes swivel and tilt stand for total ease of use. INDI PRICE $£ 189.99$ ( 1179.99 if purchased with A600/A1200/A1500)

## PRINTERS

COMMODORE MPS 1230 A high quality 9 -pin Dot Matrix Printer with paper and tractor feed and is fully compatible with Epsom FX80 and IBM Industry standards. High speed 120 CPS draft mode and an NLQ mode of 25 CPS.
INDI VALUE ADDED FREE D-PRINT - Design greetings cards, letters and posters.
AMIGA LOGO- Educational and programming language.
AMIGA VISION- Multimedia Authoring system for video, animation, sound, speech, graphics and text.

## THE NEW CD AMIGA

Just prior to finalising this advertisement Commodore have confirmed that the new CD Amiga has been delayed until August.
If there is any change then the INDI Sales Desk will be able to take your order.
However, Commodore are confident that circumstances will not change.

## TERMS AVAILABLE OVER 6, 12, 18, 24 \& 36 MONTHS SUBJECT TO STATUS. WHY NOT RING FOR A QUOTE. SAMEDAY RESPONSE. (SEE EXAMPLE)

## Panasonic Quiet tranurng

We researched the colour printer market at great depth to find a colour printer good enough to cope with Amiga's powerful graphic output, yet at an affordable price. We found the perfect printer in the KX-P2180 + KX-P2123 quiet printers.
We then considered that if you were going to buy a Panasonic printer you would probably need a quality word processing package to use with it. We found that too, with ' Wordworth', yet at a retail price of $£ 129.99$ we thought that might be a little too expensive on top of your printer purchase! So together with Panasonic we decided to give a copy of 'Wordworth' free with every Panasonic printer. How's that for added value?


The new Panasonic KX - P2180 9 pin quiet colour printer. Produces crisp clear text in mono or in 7 glorious colours with new quiet technology. The new KX - P2180 is typically 15 dBA quiet er in operation, than the competition.

- Fast Printing Speeds 192CPS Draft and 38 CPS NLO
£189.99
- Colour Printing 7 colour palette (blue, red, green, yellow, violet, magenta and black)
- Quiet Printing Super quiet 45-48dBA sound level (most matrix printers are typically in excess of 60dBA)
(-) 6 Resident Fonts Over 6,100 type styles using Courier Prestige, Bold PS, Roman. Script and Sans Serif Fonts
- 3 Paper Paths Paper handling from bottom, top and rear for total flexibility
- 1 Year warranty for total peace of mind.


## INDI PRICE £239.99

The new high performance Panasonic KX - 212324 pin Quiet colour printer offers leading edge quiet printing technology at an affordable price

- Fast Printing Speeds 192 CPS draft, 64 CPS LQ and 32 SLO.
- Colour Printing 7 colour palette (blue, red, green, yellow, violet, magenta and black)
- Quiet Printing Super quiet 43.5 - 46 kBA sound level (most matrix printers are in excess of 60 dBA )
- 7 Resident Fonts Over 152,000 type styles using Super LQ, Courier Prestige, Bold PS, Roman, Script, and Sans Serif Fonts.
- 24 PIN Diamond Printhead High performance and high quality output
- 1 Year Warranty for total peace of mind.


## Panasonic LASER PRINTER

## KXP - 4410 LASER PRINTER

## KXP - 4430 LASER PRINTER




Once again INDI have joined together with Panasonic to offer all Amiga owners the most outstanding Laser Printer offer ever. We are now able to offer high quality, professional laser printing at affordable prices. We are also giving away a free copy of Wordworth with every Panasonic Laser Printer purchased (RRP £129.99). Whether you are looking for a laser printer to handle word processing. DTP, presentation or complex graphic applications - the Panasonic range offers you the power to meet your requirements.

KXP - 4410

- 5 pages per minute
- 28 resident fonts
- Optional 2nd input bin (total printer capacity $2 \times 200$ sheets)
- Low running costs
- Parallel interface
- Optional memory expansion to $4.5 \mathrm{Mb}(0.5 \mathrm{Mb}$ as standard)
- HP laserjet II Emulation

INDI PRICE
£499.99
inc. VAT

WORDWORTH COMPLETELY FREE WITH LASER PRINTERS


KXP - 4430

- Satinprint (optimum resolution technology) ${ }^{\text {* }}$
- 5 pages per minute
- HP Laserjet III Emulation, PCL 5
- 8 Scalable fonts \& 28 bitmap functions
- Optional 2nd input bin (total printer capacity $2 \times 200$ sheets)
- Optional memory expansion to 5.0 Mb (1 Mb as standard)

INDI PRICE $£ 699.99$

'[Satinprinters use optimum resolufion lechnoiog/ TSatnprinters use optimum nesolution hectrol sotiwave tectrique amooths away vaditional jagoed edges on curved charscters and ines

by varyng me printed dot size and pesetion. WORDWORTH COMPLETELY FREE WORDWORTH COMPLETELY FRE

## Panasonic PRINTER ACCESSORIES



1) PANASONIC AUTOMATIC SHEET FEEDER

Automatic Sheet Feeder for KXP $2180 /$ KXP 2123 holds 80 A4 sheets. INDI PRICE £89.99
2) PRINTER DUST COVER

Specially tailored quality dust cover for Panasonic KXP 2180 KXP2123 printer. INDI PRICE £8.99
3) PRINTER STAND

2 piece printer stand. INDI PRICE $£ 9.99$
4) PAPER PACK

500 sheets quality A4 paper. INDI PRICE $£ 9.99$
5) CONTINUOUS PAPER

2000 sheets 1 part listing paper. INDI PRICE £19.99
6) PARALLEL PRINTER CABLE

To be used when connecting Amiga to Panasonic Printers. purchased with a printer)
7) PANASONIC COLOUR RIBBON

Colour riobon for KXP 2180/ KXP 2123. INDI PRICE £18.99
8) PANASONIC BLACK RIBBON

Black ribbon for KXP 2180/ KXP 2123. INDI PRICE $£ 9.99$

SAVE EEEE\&'s ON THE FOLLOWING ACCESSORY PACKS

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PANASONIC COLOUR RIBBON PACK
Contains 6 colour ribbons for the KXP $2180 /$ KXP2123 RRP
£119.99. INDI PRICE £89.99 SAVE £30.00II!
PACK 2
PANASONIC RIBBON PACK
Contains 2 black and 4 colour ribbons for KXP 2180 / KXP 2123. RRP $£ 99.99$. INDI PRICE $£ 69.99$ SAVE $£ 30.00$ !!

PACK 3
PANASONIC DELUXE ACCESSORY PACK
Contains Automatic Sheet Feeder, 2 black ribbons, 2 colour ribbons, 1 dust cover, 2 piece printer stand. RRP £169.99 INDI PRICE £139.99 SAVE $£ 30.00 \mathrm{ll!}$

HARD DISK SUBJECT TO STATUS. LOW INTEREST CREDIT AVAILABLE ON ALL ORDERS OVER £200

## AMIGA CDTV THE MULTIMEDIA COMPUTER TOTAL HOME



## ENTERTAINMENT SYSTEM

 The problem with any new product is that it alway takes time for everyone to realise its full potential. CDTV is no exception and in our opinion everything we have read does a pretty poor job of explaining just what CDTV can do and why it is so exciting,
## THE INDI GUIDE TO CDTV

IT'S A CD PLAYER - Yes, it will play all your Primal Scream, Pavarotti, Pink Floyd and any other CD you care to mention in superb high quality stereo, with infra red remote control. IT'S AN AMIGA - Plug in the keyboard, switch on the external disk drive and the colossal range of inexpenTS A MULTIMEDIA SYSTEM - Just imagine, stereo sound sive Amiga software can be used on CDTV, responds - truly interactivel Each CD disc holds hundreds of images and text all on screen. It asks a question, you respond, it Hutchinson's Encyclopeadia fits onto one disc. This interactive system is a unique aid for Edtical access. The whole of future is here! PACK CONTENTS AS STANDARD - Amiga CDTV Player CDTV keyboard

- CDTV Infra red remote controller - CDTV wired mouse CDTV Welcome Disc Manuals Fred Fish CDTV Disc INDI VALUE ADDED FREE - Lemmings CDTV (£34.99) Blues Brothers ( $£ 12.99$ ) Pipemania, Populous,


## PRICE CRASH f 299.99

## AMIGA CDTV ACCESSORIES

 THE BRICK - ETTE Just
plug in the Brick- ette and plug in the Brick-ette and
use any wired Amiga comuse any wired Amiga com-
patible joystick, mouse or patible joystick, mouse or
trackbail device on the Commodore CDTV. The built - in 8 - bit Micro Processor gives the Brick-ette big
smarts in a tiny packer smarts in a tiny package and
makes it easy to use inst makes it easy to use just
plug into the remote port and plug into the remote port and mouse or joystick movement on your CDTV. No loading of driver programs or soft-
ware. No switches for mous tings (with mouse) allow you or joystick. Special setrapid fire modes \& dual fire buttons. Comes with three with Python Micro Switched Joystick. Comes complete INDI EXCLUSIVE £49.99 Joystick.
With two joysticks $£ 59.99$


BLACK 1084S MONITOR At last the CDTVMonitor you have been watiting for. The original and best sellingocolour/stereo
monitor from monitor from Commodore is now available in black to
complement your CDTV.
 (or $£ 179.98$ when purchased w
Media pack).


Hy you are thinking of buying CDTV or already own One you'll be pleased to know that INDI stock all from manufacturers. We believe in CDTV available therefore continue to support this exciting and we You will always have a source of product for your CDTV from INDI.

## L to R:

CDTV Encore SCSI Controller + Intemal Mount 8109.99 CDTV Internal Genlock Black 1084S Colour Stereo Monitor (When purchased with CDTV Mutti- Media Pack)
CDTV Remote Mouse Scart TVMMonito Mouse Scart TVMMonitor Lead (inc Stereo Phono Lead) Megachip - 1 Mb Upgrade Chip RAM Upgrade CDTV Trackball

## AMIGA CDTV EXTERNAL

 HARD DISK DRIVE Youve got the CDTV, you've got the keyboard and thefloppy disk drive - for a total thar's needed is an ultra fast hard disk drive The CDTV-HD unit boasts a massive 65 M disk storage with lightning fast access times through its SCSI interface. The unit comes complete with Workbench 1.3 and all necessary cables.


INDI PRICE
£269.99

## DESPATCH

All orders received by 6pm Monday to Friday a despatched that day for next working day delly using our national courier - Securicor (UK
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ery Delivery queries can be resolved immediately using our on - line computer
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(DUTY FRE ACCEPT B.F.P.O. ORDERS CARRIAGE CHARGE AT POSTAL RATES.
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ORDERING.

## RICES ARE VALID FOR MONTH OF PUBLICATIONS

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BY POST- simply fill in the coupon below.
By PHONE- phone lines open 9.00am- 7.00pm Mon- Fri. 9.00am- 4.30 pm Sat. - where your call will be answered by one of our INDI sales team. After 7.00pm each day your call will be answered by answerphone. If you would like to place an order
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LICHFIELD,
AC0693
STAFFS WS13 7SF
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# SOFTWARE DEMON (0736) 331039 - PHONE OR FAX 38-40 QUEEN STREET, PENZANCE, CORNWALL TR18 4HB 

HARD DRIVES FOR 500/600/1200, WITH COMMODORE GAUARANTEE OR WITH OUR

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A500 HD
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Amiga diary
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Turn to page 42 now!


Evelyn Glennie, fop percussionist and Amiga aficionado, falks about her music

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## £3,000 holiday competition!

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# The Best Word Publist (Amiga Formes 

We'd simply call it the best Amiga Word Processor. But if after using it, the experts insist on calling Final Copy II the best Word Publisher as well, we're not complaining!

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Word Publishers go beyond simply producing normal letters and documents (at which Final Copy II naturally excels) and progers into a world where how the whole dociment tooks is just as impontant as whut it sans. Admittedly, this cen be achieved with Desk Top Publishers, but they cant easily be used as Word Procesors, especially when a good looking leter nexds creating quickly - they're far too cambersone. This is where Final Copy II offers the perfext balance between the two requirements. Ense and speed of use, combined wiht complete control and perfet final pinted presentaion.


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## NE WV S

## ection

## inside $\mathbf{£ 2 0 0}$

ENTRY-level Amiga prices have been slashed, bringing the computer's recommended retail price inside $£ 200$ for the first time.

All machines and bundles in the A600 range see the cuts, which are aimed at increasing the price gap between the entry machines and the superior A1200.
The standalone computer has been given a $£ 50$ cut, picking up a new price tag of $£ 199.99$. The Wild, Weird and Wicked and Epic packs now cost $£ 229.99$ and $£ 349.99$ respectively.
Dealers are expected to add their own discounts. Indi Direct
 Mail were one of the first to announce details, with their standalone A600 costing E189.99.
"We had expected to get down to this price by Christmas but this is a real bonus," said Indi boss Craig Saddington.
There is now a real price difference between the A600 and A1200 - it must be the best value computer on the market."
The ST pack includes a small selection of leisure software but the computer is difficult to upgrade and is not supported by many games developers.

 which has been produced from film will be submitted to bodies such as the British Board of Film Censors for classification.
Ratings given to the software will be displayed on packaging and allow parents to easily identify games which contain material that might be unsuitable for their children.

Some of the first affected could be those for Commodore's new CD Amiga system, which the firm has now confirmed is due for a summer launch. Industry bosses fear

## Call for <br> Amica PD

A ROMANIAN engineer has just set up an enthusiasts club with the aim of helping the few Amiga users in his country to get the most from their hobby.

The man behind Amiga-Club, Bitca Bogdan, says Romania's low salaries - he earns just £40 a month - make computing expensive, with many products keeping their Western prices.

But Bitca says his Bucharest-based club, running A500 and A1000s, has found Amiga Computing's editorial pages a helpful source of information and its CoverDisks invaluable.

And now he is looking to the West for help, especially in building a collection of public domain software which can be distributed freely among his small club.
"Unfortunately in our country there isn't a shop with magazines, software and hardware for the Amiga," he said.
"Amiga-Club Romania is a nonprofit organisation whose purpose is to popularise Amiga computers in Romania.
"Our need is disks - either public domain or those from the covers of magazines. They will help us be successful in our activity."

If you would like to join Amiga-Club, the address to write to is: Bitca Bogdan, Street Cornelia, No 8, Appt. 1, Sect. 4, Bucharest, Romania.

# News Briefs 

## Kicidies CD book

ALISTAIR in Outer Space is an interactive story book which has been developed for CD Amigas by Bedford-based Altered Images (0234 340722).

It features 26 animated page, an illustrated index and a selection of games. The package costs $£ 24.99$ and is aimed at children aged between five and nine years old.

## Amiga plant sale denied

RUMOURS that Commodore have put their Amiga development plant at West Chester, Pennsylvania up for sale have been denied by the firm's UK boss David Pleasance.

The firm own two buildings in the same area, one of which has been used for C64 manufacturing. It would now make sense to put both operations under one roof, he said.

## Scanning costs are down

LADBROKE Computing (0772 203166) have cut the price of the Golden Image Hand Scanner with programs Touch Up and Deluxe Paint 3 to £89.99.

## Piracy arrest

A 19-year-old Amiga user was arrested in Hertfordshire recently after police seized games that have not even been released in Britain.

It is alleged that the man pirated the software and then sold it to other gamers through bulletin boards. The Federation Against Software Theft joined the police in the operation.

## One meg for $\mathbf{£ 3 0}$

UPGRADE manufacturer Amitek have announced the immediate availability of a 1 Mb memory upgrade for the A 500 P costing $£ 30$.
"The new RAM board is aimed at the first time user," said spokesman Andy Leaning. "It's low cost, easy to fit, doesn't void the computer's warranty and comes in a colourful case."

It is available through several Amiga dealers including Silica Systems, who can be telephoned on 081-309 1111.

## Inside Imagine

THE book Understanding Imagine 2 has been reprinted by Alternative Image ( 0533 440041) following demand from users of the rendering software. It costs $£ 25$.


TWO graphic designers have used their new Amiga to help in the production of a recent episode of London Weekend Television's South Bank Show.

Twenty-year-olds Simon Hough and Anthony Murray, both from Birmingham, were asked by LWT to illustrate a documentary about fantasy writer Terry Pratchet and his works.

Part of the programme needed to show a young child play-

## LWT tune into Amiga graphics

ing a computer game, for which Chrystal Haze Graphics designed a suitable animation. "Our prime objective was to emulate a game, so there was no call for advanced 3D modelling techniques because this would stray from a child's perception of a computer game," said Simon.
"The key to the success of the design was that it had to be convincing to the viewer and yet still appeal to children.

The designers were already familiar with the Amiga. For over a year they have been trying to provide a low-cost computer graphics service.
"We chose the Amiga computer because it was a stable basis for producing a high standard of graphic images while maintaining a relatively low level of financial support," said Simon.
"When Commodore released the AGA chip set we decided to incorporate the new system into our design criteria.
"It provides an ideal stop gap for testing animations and still before going into the process of final design or into the process of printing."

## Consecutive grabs from new V-Lab

THE recent update of V-Lab enables Amiga users to import video sequences from recording decks without the timecode feature found only on expensive machines.

V-Lab Y-C is the third version of the package and is now compatible with composite and Y-C video recorders. Interleave frame grabbing software is also supplied.

Its most impressive feature enables the hardware to grab consecutive video frames directly to hard disk by making multiple passes over the film.

The operation is repeated until a 25 frames per second sequence has been generated. A maximum of 200 frames - about ten seconds worth of video - is accepted.

Martin Lowe from distributor Amiga Centre Scotland (0896 87583) claimed the system is ideal for home users, video users and CD-ROM developers who need to store video images.

Priced at $£ 381.88$, users who want to leave the system unattended can buy an infra red video deck controller as an optional extra. The controller's price remains to be fixed.


V-Lab Y.C: Compatible with more VCRs

## Multimedia updates for video board

GREAT Valley Products ( 01012153378770 ) have upgraded multimedia video board IV24 to give the pack's software a range of new features and improvements.
MacroPaint 2 is a real-time, 16 million colour paint package featuring a toolbox-style interface that can be moved to a more convenient part of the screen. It can load and save JPEG compressed files and painting can be done on a 24 -bit image while work is viewed at between 12 and 21 bits for extra speed and lower memory needs.

A newly-designed custom version of Caligari24 gives renderers a line-up of extras, including an unlimited number of light sources and better animation functions.
MyLad enables video productions to be enhanced with creative transitions while Desktop Darkroom offers image capture, retouching and a range of special effects for image manipulation.

GVP's Bill Prescott: "With the addition of this software upgrade, IV24 represents an opportunity for professionals to optimise their creative potential and productivity."

British distributor Silica Systems (081-309 1111) are selling upgrade packs for $£ 99$.

## Deluxe extras for disk utility

DISK utility software Quarterback Tools has been improved by its Texas-based makers Central Coast Software to include new features and improved performance.

Quarterback Tools Deluxe is claimed to be much faster than earlier versions, have improved hard disk organisation functions and a better undelete facility.

Other features include disk recovery, a sector editor, ability to improve efficiency and compatibility with the latest Amigas. It is controlled though a new "3D look" interface.
Several additional programs are supplied in the package: Locator, Replicator, File Erase, Disk Eraser, Encryptor, Keystroke Finder, System Mover and Brain Cloud.

Locator finds files no matter where they are on the disk, Brain Cloud protects sensitive materials from use by others, while Encryptor can encrypt and password-protect documents.

Information can be permanently deleted using File Eraser and Disk Eraser.
"Users can sometimes forget the huge investment in time that their work represents," said CCS's marketing director Rick Unland. "Like any cutting edge technology, problems can occur.
"Quarterback Tools Deluxe is not just for emergencies any more. Central Cost Software have paid close attention to their users, found out what they needed and given it to them."
It will be sold through several UK dealers and has a US price of S125. Upgrades are available to existing Quarterback users for \$50. CCS can be telephoned on 01015123286650.

## DLARY DATEES

16 to 20 September 1993 Live '93
Organiser: News International (071-782 6000)
Venue: Olympia, London
A public consumer electronics show. Commodore plan to attend.

5 to 7 September 1993
European Computer Trade Show Organiser. Blenheim (081-742 2828)
Venue: Business Design Centre, London
A trade-only event where new games will be unveiled.

11 to 14 November 1993 Future Entertainment Show (0225 442244)
Venue: Olympia, London
A multi-format computer and console show.

19 to 21 November 1993
International Computer Show
Organiser: Westminster Exhibitions (081-549 3444)
Venue: Wembley, London Discounted software and hardware plus product releases.

## OVERSEAS

3 to 6 June 1993
Summer CES
(010 1202457 8728)
Venue: Chicago, USA
A massive consumer electronics show with Commodore presence.

- If your company is organising a show relevant to the Amiga and it's not listed; let us know so we can include the information in the diary.


## A ロ 0 4 0

AMIGA owners using their computers for home productivity or small business work are among those targeted for Star Micronics latest printer, the LC24-20 II.
It is the successor to the firm's 24 -pin LC2420 and features an increased buffer size of 39 k - expandable to 71 k - to increase the speed of graphics printing.
There are ten resident fonts and eight more can be bought as optional cartridges, including Super Letter Quality Fonts with 48 -pin emulation.
Print speeds are 200 characters per second in dratt mode and 67 cps in letter quality. Up to 210 cps can be achieved in high speed draft mode.
Amiga-specific drivers have been developed by Star. Price, $£ 351.32$.


LC24-20II: Big memory for Star printer

## SCSI brings mass storacje to A1200

THE latest Amiga upgrade from American specialist CSA is an A1200 accelerator card featuring a SCSI interface to enable mass storage peripherals to be used with the computer.

CSA Twelve Gauge uses a 68030 processor running at 50 MHz and has a socket to allow a maths co-processor to be fitted as an optional upgrade.

The speed of the computer is improved further by employing Burst Mode processing, a faster and more efficient way of managing data from 32 -bit memory.

Up to 32Mb of this fastRAM can be added to the board, which fits to the Amiga's trap door and is available in several different configurations.

Prices were not fixed at the time of going to press but a $40 \mathrm{MHz} 68 E C 030$ version with 1 Mb of memory will cost about $£ 399$ while the 50 MHz board will sell for about $£ 499$.

The British supplier is Omega Projects who can be telephoned on 0942682203.

## Improved graphics for rendering system

SINGLE frame rendering system Simpatica has been improved to give video professionals AGA graphics support for IFF pictures and animations.

Also new is a 24 -bit rotoscoping system which enables sequences of video frames to be digitised from tape, editing and re-rendered with full single frame accuracy.

And the program's developers, Leicestershire-based Optonica (0455 558282), have also announced details of a new package for creating timelapse video and stop motion sequences.

Video Timelapse, or VDL for short, has a range of features including a point-andclick user interface, on line help and onscreen video deck control.

It has start sequence control by Future, Time and Manual modes and stop sequence control through Unlimited, Rendertime, Timer, Duration, Timecode, Frames Recorded.

Upgrades from earlier versions of Simpatica cost $£ 49.95$ while the full price for newcomers is $£ 350$.

VDL costs $£ 350$, or $£ 199$ will buy the software if the buyer already owns hardware included with Simpatica.

## Power tool to help program makers

PROGRAMMERS are targeted for an interactive disassembler and software inspection utility which is claimed to be the most powerful available on any personal computer.

ReSource comes from US firm The Puzzle Factory and is used to disassemble machine code into labelled and formatted source code which can then be reassembled.

It can cope with more than 200,000 lines of code per minute and Amiga enthusiasts can also use the software to examine all the software functions of the Amiga.

A printed manual includes tutorials and within the program there is a Hypertext system which is wordindexed to provide in-depth information about the software.

British distributor is through Helios Software (0623 554828). They charge $£ 130$ for the package.

## What do you know?

Although Amiga Computing has scores of contacts in the Amiga world we need you. If you have some hot news ring John Butters on the news desk now on 0625878888 or fax to 0625879966 .
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# Top secret work exposed! 

COMMODORE are working on a project so secret that they've only told a few select developers about it.

At the World of Commodore Show in New York, Commodore's Lew Eggebrecht said that some projects, such as networking,


Sonic not to appear on CD Amiga?
were currently on hold due to another urgent project. This reporter has done some snooping and discovered exactly what.

Code-named AmigaCD 32, this hot new hardware unit combines the basic circuitry of an Amiga 1200 (the AGA chipset and the EC020 processor) with a top-loading CDROM drive, similar to that found on the Sega MegaCD.

How can Commodore hope to take on CD-ROM giants like Sega and the coming Nintendo and 3DO CD-ROM units? By using an old sales tactic they dug out of their early 1980s archives - selling hot equipment at a low price.

An anonymous games house reports that Commodore told them that AmigaCD 32 is slated to sell at only $\$ 299$ ( $£ 199$ ) com-

# Denny Atkin with the latest news from the other side of The Pond 

plete. This puts it about $\$ 100$ ( $£ 67$ ) less than a Sega Genesis (the US version of the Mega Drive) with the CD-ROM attachment, and at less than half the price of 3DO.

So is this just CDTV with A1200 guts? Nope. My informants tell me that AmigaCD 32 doesn't have all the com-
puter-like expansion ports found or CDTV, and it looks more like a games console than a VCR.

This doesn't mean it can't be turned into an Amiga - Commodore are also developing an expansion unit that will allow standard computer peripherals to be attached.

Will this be the machine that puts Commodore back on the top? Even the developers I talked to who are actually doing titles for it aren't brimming with optimism.

Although the hardware is quite capable and the price is low, it's software that sells the consoles, and most companies seem to be targeting sure bets like Sega for their CD titles.

## Powering up

THE ANNUAL World of Commodore Amiga show, held April 2-4 at the New York Passenger Ship Terminal in Manhattan, was a treat for A1200 owners looking to add a bit more power to their hot new machines. Those who went seeking software, though, left largely disappointed.

Although there were 33 exhibitors at the show, many of those were dealers, magazines, and purveyors of public domain software. Among the more well-known developers who did attend were Centaur Development, DKB Software, Gold Disk, GVP, ICD, Microdeal, Migraph, Moonlighter, NewTek (in the guide of Video Toaster Magazine), SCALA, Soft-Logik, and Utilities Unlimited.

Commodore's booth was consistently crowded, especially around the Amiga 4000T, which was shown to the North American public for the first time at the show.

The A4000T (" T " is said to stand for "floor sTanding unit," rather than "Tower," due to NCR's ownership of the latter word) sports five Zorro III 32-bit expansion slots, four IBM AT slots, six drive bays, both IDE and SCSI-2 on the motherboard, and - of particular interest to video nuts - dual video slots.

## FUTURISTIC-LOOKING

The case is the slickest ever to come from the big C, with a futuristic-looking smoked-plastic curved door covering the drive bays. The A4000T is still a couple of months away from shipping, and promises to be a pre-mium-priced product, not one for the Zool crowd.

Lew Eggebrecht, an information-seeking journalist's dream, once again spilled the beans about Commodore's development plans.

You've read about the high and low-end 24 -bit chipsets in previous columns (see the April issue of $A C$ ); the only news there was that the low-end chip set will have support for adding a 16 -bit stereo DAC for improved sound,
and that the target date for the highend chipset, which ships first, has slipped to mid-1994.

Commodore's upcoming DSP chip has found a new home on a Zorro III card. The original plan had been to place the chip on the 68040 CPU card, but Commodore realised they could double the performance of the AT\&T DSP 32010 chip if they placed it on an expansion card with its own RAM.

This also allows them to run the card at 66 MHz , instead of "only" 50 MHz . The board will ship with its own multitasking operating system based on the AT\&T VCOS software. Initial software will enable use of the board for real-time sound processing, and libraries to use it as a V32bis
 modem, JPEG image decoder and encoder, and MPEG audio decoder and encoder are in the works as well.

This board won't be cheap, but comparing its capabilities to those of the basic Motorola DSP in the Atari Falcon is like comparing a 33 MHz 68040 to the 1 MHz 6502 found in the C64.

Eggebrecht also said that CD-ROM drives for the rest of the Amiga line were a top priority right now. The drives will be double-speed mechanisms and will support multisession discs (useful for Kodak's Photo-CD), and will include custom microcode to speed access dramatically.

Eggebrecht said drives will be available for all Amigas, with the probable exception of the A600, since the A600 doesn't have the needed DMA access.

Perhaps the most intriguing hint of the Amiga's future, though, came from Commodore US president Jim Dionne.

Towering above the opposition, the A4000T

When asked during a question-and-answer session why Commodore hasn't been able to repeat the success of the C64 in the US market, Dionne hinted that Commodore would be making a major push for the consumer market this fall with a new machine that could be the next Commodore 64. He emphatically stated that this would not be the A 600 - it's more likely to be the AmigaCD 32 mentioned above.

Will it be the next C64? Commodore has already lost the support of virtually all the US games developers. And a company that would sell sushi as "Commodore's Cold, Raw, Dead Fish!" is trying to go up against Nintendo and Sega in a marketing war? I don't think so. Is this the 64GS all over again?


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# Hardly a good sign 

As mail order and high street dealers alike begin at last to ship the A 1200 HD in quantity, bitter feelings and cries of anger linger on over the way in which the machine's parent company finally staggered into the hard drive market.
The seeds of the furore were sewn last year when, to the stupefaction of those present, Commodore launched the A1200 in only one flavour - without a hard drive.
Most observers scratched their heads and wondered whether an external hard drive connecting through the PCMCIA slot was to be announced shortly, but this did not happen and the internal expansion route became the only option for the storage hungry user.
Given the easy availability of 2.5 in IDE drives, it seemed that the damage could be limited. What rapidly became clear, however, was that although the hardware was easy to come by, Commodore themselves were making the ambitious owner's life a misery by supplying A1200s with five Workbench 3.0 disks as opposed to six.
The missing disk? Why, the installation disk, of course, containing the hard drive tool kit and other essential hard drive utilities. Without this disk, A1200 owners might buy their own drives, but fit them they could not.
Magazines, assuming that the A1200 would be supplied with the same Workbench set as included with the A4000, wrongly reassured their readers that they would be able to buy a drive and cable then fit it at home, thus raising more doomed expectations.

## Flies in a cesspit

Bewildered (and rather annoyed) customers tried everything from the A600HD install disk to a variety of shareware utilities, and confusion multiplied like flies in a cesspit. Commodore, fiddling merrily as the blaze developed around them, played dumb, and restricted themselves to a few statements about the naughtiness of copying disks distributed with other Amigas.

Why the decision was taken to omit that vital sixth disk from the A1200 Workbench 3.0 set will probably remain a mystery. Commodore were never very good at discussing their motives, and the MD at the time of the A1200 launch, Kelly Sumner, has since left the company.

What is clear, however, is that the decision left a gaping hole in the market ripe for both exploitation and the confusion we rapidly saw developing.
Smaller dealers, especially those in the mail order industry, took the opportunity to buy in cheap IDE drives and fit them themselves, but again they ran into the brick wall of Commodore's reluctance to give permission for dealers to supply

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 machine, but given their record on hard drives, should we hold our breath for the compact disc?

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Before the first of $A C^{\prime}$ 's three-part B\&PJr tutorials, it's worth spending a little time exploring the interface and installation of the software. Hard disk users will be happy to know that installing the program is simply a matter of dragging the B\&PIr drawer onto the hard disk partition.

Assuming hard disk users have done what they must, the inevitable double click on the B\&PJr icon will reveal the three basic elements of the interface, namely the track window, transport control and window selection icons. On certain systems loading may take a while but be patient - it's well worth the wait!

## Icon start

Exploring the icons is probably the best place to start - so simply move through the various icons clicking and closing them in turn. After a couple clicks you'll notice that some of the advanced options have been removed.

Obviously it wouldn't be good business on the part of Blue Ribbon to hand over the entire package, and it's here where $A C$ 's amazing upgrade offer begins to show its worth.

Although a fair selection of windows are inactive, B\&PJr still offers incredible power and a real taste of the potential within B\&PPro2. We'll cover the various options as and when required but for now

## Amiga Computing brings you

 Bars\&Pipes Jr, the most powerful musical giveaway in magazine history - an eight-track sequencer with powerful editing, Midi and internal sound support,and full save
we'll turn our attentions to transport control.

As you may have already noticed the transport controls - like the larger track window - can be closed down and returned to their icons just like all the program's windows.

However, assuming transport control is still active you'll see a selection of tape deck controls, the present tempo setting, a song position counter plus an

## sequencer bar none

## The best

assortment of flag icons and special features.

In subsequent support columns we'll look at all the advanced features but for now we'll stick to the basics. Although the sequencer is empty we can still experiment with the controls. Click on the play button and you should see the song position marker begin to move within the track window.

To stop playback, simply click on the
blue square or alternatively click on the square and triangle combination button to jump the sequencer back to the beginning without terminating playback.

If you choose the stop option you can still move back and forth through the sequencer with the fast-forward and rewind arrows. To adjust the tempo simply click above or below each figure using multiple clicks or a sustained hold and the tempo should

## Focus on the edft

We'll look at editing in detail over the coming issues but for now here's a brief taste of the power on offer. Assuming some changes are required to the performance, double-click on the sequence window to reveal the track in close-up. Now click on the various icons listed below depending on you requirements:


Magnifying giass - click on notes to obtain specific note information


Copy - click on any existing note to make a duplicate which can be stamped down according to the defined note settings


Pencil - add new notes to the sequence according to the note length and volume settings


Erase - delete any note or group of notes


Magic wand - adjust the length and volume of existing notes


Toollse - apply tools - such as quantise - to single or group selections


Move - adjust the pitch and position of the note according to the selected note length


Drag box-make multiple selections used in combination with the move, copy and crase options


Step-time - add new notes according to pre-set note length and volume settings. If used with internal sounds the Spare keys requester must be active. Use the space bar to add rests, and bockspace to delete unwanted events

COVERDISKI

## Recording a classic

When you feel comfortable with the necessary set-up procedure ar ether Midi or internal sounds, it is time to attempt some acording Move to the song pull-down and select New. Now folaw the set-up procedure depending on you preference for inter-

## wif or Midi sounds.

In the case of the internal sounds this will require the A rigoPhone tool at the end of each track and a Spare keys icon It the beginning, but unlike the demo you'll have to specify the maples yourself by double clicking on the AmigoPhone icon and sefring the sample by selecting New.
This will present a requester which you can use to load a samPie from the selection available within the instrument drawer on the CoverDisk.
Assuming set-up is complete, the next move is to make sure The metronome is on-line and has at least a one-bar lead-in prior Etrocording. Next click on the grey box just before the sequence nendow until it displays a red R .

Finally make sure the track is selected - a small red arrow
should appear just after the track name. Now move to the transport control and click on the record button. The sequencer is now set to record and if you click on the play button recording will begin.

All that remains is to hit the button, play your masterpiece, and press stop. When recording is complete the sequencer automatically de-selects the record button in the transport control as a safeguard - this must be active in addition to the record or merge options on the target track before you can record anything.

If you want to re-record the sequence, simply rewind the sequencer, re-select the record option in the transport and press play - this will automatically overwrite the original.

If however you wish to combine the old with the new, toggle the record, merge, and play button on the target track until it shows a red M, activate the record button within the transport and press play. Any new notes will then be combined with the old.

reflect any tempo changes you make.

A particularly useful addition just below the tempo control allows instant half and three-quarter speed playback and recording. Rather than having to adjust the tempo to play a tricky section correctly, clicking on either option to temporarily slow the sequencer when necessary.
O-n and Ilimple editing
netes meserdling a dream
change as desired. Obviously with no wang in memory tempo changes are pretty maningless.
However if you make a quick trip to the mindows pull-down menu and select te Metronome option, a small requester mall appear. For the moment simply click an the internal button, set the lead-in to $a n e$ and then close the requester. If you now hit the Play button and continue editing the tempo a short clicking sound will

Moving on to the track window we finally arrive at the heart of the sequencer offering eight tracks complete with the pipes that give the sequencer its name.

Although rather unassuming, the plumbing either side of the sequence window sandwich is absolutely essential to the program allowing the addition of various tools which can perform everything from simple I/O operations to special effects.

In order to get any sound from the sequencer the first task is to place suitable
tools at both the beginning of the input pipe and the end of the output. By default B\&PJr loads up with Midi-in and out tools already in place - very handy.

For those with a suitable Midi interface and a Midi compatible sound source all that remains is to click on the small grey box just after the track name a red arrow will appear inside the box and the sequence window will become active.

## Sound checks

Now move to the output on the output pipe and select one of the 16 available Midi channels by clicking on the channel icon - a pop-up requester will appear allowing you to make the appropriate channel selection.

If you select a voice for the appropriate channel on your synth or module you should be able to play some notes and hear the results - assuming you have some form of amplification of course.

If after the aforementioned procedure there's still no sound, check the leads between the Amiga and your instrument -
remember you need both Midi-in and out connections. Although B\&PJr is primarily a Midi sequencer, it still allows access to the internal talents of the Amiga with notes input via mouse or keyboard.

Before the guided tour to internal sound set-up, it's essential that readers running a 1 Mb system should read the instructions detailed in the box labelled Attention 1 Mb owners.

By far the easiest way to learn is to load the demo.song supplied on theCoverDisk. To access the aforementioned demo, move to the song pull-down and select load - a prompt will ask whether to save before closing - click on the NO.

A new requester will then pop-up showing the available volumes. Select the CoverDisk and list the contents of the Bars \& Pipes-Jr drawer - at which point select and load the Demo file.

Once safely installed you'll see the basic set-up required for playback and recording. However before a close inspection, hit the play button and give it a listen. When you've become thoroughly bored, click on the stop button and we'll look at what makes the pro-

## Atention 1Mb oumers

Prior to loading the B\&PJr demo song on a 1 Mb system the following procedure must be carried out:

1. Type ENDCLI into the CLI window and hit Return
2. Load B\&PJr and select the memory savers option from the preferences pull-down menu. Select each option with the exception of Use Gray Scale - a small check mark should appear alongside each item.
3. Once the Close Workbench option is applied certain systems may require a re-boot in order to return to the normal CoverDisk environment.


gram's internal sounds tick. As you can see, all that's required to turn Midi notation into internal sound is an AmigoPhone tool placed at the end of the appropriate track.

Like most tools the AmigoPhone icon can be opened with a double click revealing the set-up for that particular tool. For the moment leave the various parameters as they are and close the requester.

Obviously the AmigoPhone tool only supplies the sample and its parameters the question is how to get the note information into the sequencer. The answer is the Spare-keys tool which can be found in the tool box or more easily as the input tool on track 8 in the demo. If you select that track by clicking

## Amiga Diary

Author: Andrew K Pearson

Amiga Diary is one of those desktop utilities so often found in the public domain and so often left out of the average owner's PD collection because most of us don't realise just how useful they can be.

Rather than offer an alarm function for events which occur during a single day, Amiga Diary is designed to keep track of events and appointments over the course of a few weeks, months, or even years.

It features a page flicking system to simulate a real paper diary and has a quick "look-up" function for jumping to any day required.

Each day can have as many pages as required for its diary entries, which means that the user need never type an entry in short form as is so often the case with diary programs. If this isn't enough for all information, the scribble function will enable the jotting down of notes.

Most programs of this type allow just a single line of text for each entry with little or (usually) no explanatory information to remind the user about the appointment or event.

Amiga Diary will succeed where others fail simply because it offers much the same ease of use as a normal diary without forcing the user to stick to cryptic little notes.
on the button directly after the track name, a small red arrow will appear. Now double click on the Spare-keys tool and a miniature keyboard will pop up If you click on the keys the sample assigned to that particular track will sound.

Although useful on occasion, it's the Amiga keyboard option offered by the Spare-key tool that really makes internal sounds a viable option. Assuming the Spare-key requester is still active, try tapping in a few notes on the bottom two
rows on the Amiga keyboard. You should hear the sample play and see the notes light up on Spare-key requester - to move through the available octaves simply click and drag the octave bar beneath the miniature keyboard.

To try a different track simply click on the original Spare keys icon and drag it to the track of your choice. Click on the input button - the red arrow will move to new track. Now double click on the Spare keys tool to open the requester. You should now be able to play notes as before.

Last month's disk was meant t include the file Expload in its C directory, but due to an attack o intense moronic dullardness of the part of the person responsibl for this simple task, it did no appear. Sorry!

Users of Maxiplan wishing to fo low last month's ACAS column fix can now proceed by substituting AC62 where AC61 was in the orig nal.

## Faulty disk? <br> If you subscribe to Amiga Computing ser your disk has been damaged in the please return it to: <br> Amiga CoverDisk, Europress Direct FREEPOST, Ellesmere Port, South Wirm L65 3EB <br> If you bought your magazine from a shop and found that the CoverDisk was dam aged, please return it within two months to: <br> Stanley Precision Data Systems Litd Unit F, Cavendish Courtyard, Sallow Road, Weldon North Idustrial Estate, <br> Corby, NorthantsNN17 IUX

## Quoter

## Author: Ben Merrifield

Quoter is an amusing program of the fortune cookie type which, every time it is run, provides a quote for the day. This can be either a general truism, such as Sod's Law, or a quote taken from a famous personality, such as Winston Churchill or Groucho Marx.

Most titillating of all are those which have been added down the years by wits in offices and workplaces around the world, my own favourite being: "When the plane you are on is late, the plane you are transferring to is on time." (anon).

The CoverDisk contains not only the Quoter program, but also a sizeable file of ready-made quotes which can be added to using a standard text editor or a wordprocessor. This file, called Quotes.Dat, can be found in the CoverDisk's S: directory, and for the program to work on another disk must be transferred across.

In other words, if you have a hard drive called Workbench:, you would boot from the hard drive, insert the CoverDisk, and drag the Quoter drawer across, then open a Shell and type:

> COPY AC62:S/QUOTES.DAT TO S:

Users of floppy drives can do the same to put Quoter on another disk, with the one difference that they might have to delete a few files first.

Quoter also requires the Hisoftbasic.library, which can be found in the CoverDisk Libs drawer. To copy this to your regular system disk, type the command:
COPY AC62:LIBS/HTSOFTBASIC.LIBRARY TO LIBS:

The program should now function perfectly.
Readers who have access to a book of quotations or who find their favourite isn't in the data file can add their own and have the Quoter run on every boot-up. To do this, edit your startup-sequence and add the line:

> RUK >NIL: <NIL: [DIR]/QUOTER
where [DIR] is the name of the directory into which you have copied the program. It really can brighten up a boot-up.

## PrintManager v1.1

## Author: Nicola Salmoria

Print spoolers are utilities which the non-printer owning public will take one look at and ignore. The rest of us, however, will recognise them as one of the most useful and time-saving utilities ever devised.

When a program prints to any printer, be it a slow or fairly fast model, the output is passed to the print buffer which, if available, is normally a few kilobytes of RAM hardly enough for a page of text.

When a DTP layout is printed, the resulting reduction in speed while the program waits for the printer to complete the page can be excruciating.

The result is a loss of productivity and, if using a very slow printer, sanity. PrintManager is a priceless utility for Kickstart 2.0 and above which intercepts all print jobs sent to the printer ports, no matter which program originates them, and spools them to a waiting queue of print jobs.

Depending on the user's preferences, the directory to which the print jobs are spooled can be either a floppy, a hard drive, or the RAM disk. A tool type found on the PrintManager icon can be altered to suit any system, so if the user has a hard drive but not much memory, spooling to disk is the obvious and easy choice.

A graphical interface controls all organisation of jobs, enabling the pausing and rearranging of the queue, and as PrintManager runs like a Commodity, it can be hidden and controlled using Exchange.

scluded this page to help you out. Below we explain how to copy Eles from one disk to another, how to copy the entire CoverDisk and how to de-archive programs. none
of the first things you must do when get your CoverDisk is make a backup copy, then put the original CoverDisk away for safe keeping. As a rule you should also do this with the majority of your software collection.

The Amiga Computing CoverDisk is designed to be as simple to use as possible. Follow these instructions and you'll be up and running in no time!

## How to make a backup

To copy the entire CoverDisk, load up your Workbench disk, then either click once on the CoverDisk icon and select Duplicate, or select Copy from the Workbench menu, or open CL/Shell and type:

## Diskcopy fere ofo: to ofo:

When prompted, put your CoverDisk (the source disk) in dif: and be ready to replace it with your blank disk (the destination disk). Follow the Amiga's on-screen prompts until the disk copy is completed. Now put the original away in a safe place and use your backup.

## Copying individual files

You might at some point want to copy a single program from a CoverDisk to your compilation, Workbench disk or even your hard drive.

To do this you'll need the COPY command. As most CoverDisk programs are stashed away in their own directories, the quickest way to copy a program is to copy the whole directory at once. Use the command:

COPY (directory) TO (nevdisk) ALL
where \{directory\} is the full pathname of the directory you wish to copy, and \{newdisk\} is the name of the disk and directory into which it will be copied.

For example, if you wanted to copy a utility called FRED from CoverDisk 27 's Utilities drawer to a directory called FRED on your Workbench disk, you'd type:

## COPY COVERPISK27:UTILITIES/FRED TO VORXBENCH1.3/FRED ALL

Alternatively, you can click once on the FRED directory icon and drag it across to the new disk's window. This has the advantage of creating a new directory for you and copying the icon as well.
Once you have moved a particular program to where you require it you could experience some problems running the program. This is sometimes caused by the program not being able to find files which it needs to run.
A good example is the text files on the CoverDisk. These have been crunched using PowerPacker, so when you try to copy them to another disk and then try to read them you can't unless you have also copied the Powerpacker library into your LIBS drawer.


So if you have copied a program from the CoverDisk to your Work disk or hard drive make sure you also copy any other files the program requires, ie fonts, libraries, device drivers and Ccommands.

## De-archiving

Occasionally we have so many programs to fit onto the CoverDisk that we have to archive them. Archiving is where we take the entire contents of a disk and compress them into one file which is much smaller, giving us space to fit more programs onto the disk.
Dearchiving programs which are on the CoverDisk is a very simple task. If a program has been archived then you will need a blank disk to dearchive it onto.
Say we have archived a program called FRED. You simply double click on FRED's icon, and will be asked if you have a blank disk ready to dearchive to. Type " $y$ " or " $n$ " accordingly.

Your computer will then copy the archived file into its memory and ask you to insert your blank disk. It will proceed to format the disk, and will then de-crunch the archived file onto your blank disk.

Once this has been done you can simply reboot your machine with the disk which contains the dearchived program on it and then use the program as instructed in the CoverDisk pages.

Note that if you have a Workbench 2 or upward machine you must boot with the CoverDisk writeenabled to perform the dearchiving process.


## Workbench 3

If you have a Workbench 3 machine, don't worry - most if not all of the programs on the CoverDisk will work on your machines.
If the program is specifically designed to work with Workbench 3 then you may have to copy the program to your hard drive or Workbench disk using the process described earlier on this page.

# Upgrade 



## Here's a money-saving opportunity to upgrade from

 this month's cover disk Bars\&Pipes, Jr! Just £199, including VAT and p\&p, buys you the new Bars\&Pipes Professional 2.0 from The Blue Ribbon SoundWorks! That's a £100 saving!Bars\&Pipes Professional 2.0 is without doubt the hottest item in both the sequencer and multimedia markets...

## Amiga Computing

Please send me the Bars\&Pipes Professional 2.0 Upgrade (9547) I enclose either:

- This original order form, or
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I wish to pay $£ 199$ (inc VAT and p\&p) by:
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[^1]
## CoverDish

The upgrade kit includes two disks, an excellent 384 pag manual in a binder, and a registration card that qualifie you for upgrades and new product information.

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To upgrade* to the best Amiga music and multimedia package, Bars\&Pipes Professional 2.0, send this order form to Europress Direct, PO Box 2, Ellesmere Port, South Wirral L65 3EA If you don't want to cut up your magazine you can send your original CoverDisk together with a photocopy of the form.

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## Marcam

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## THE GENLOCK PEOPLE



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The Rendale range of Amiga Genlocks begins with the 8802. This is a Genlock, which, when attached to an Amiga computer and a suitable video system, will allow you to mix video and computer graphics. It offers all the functions that you need, such as:

* RGB feed through, allowing for a preview monitor.
* High quality output video, which in default mode provides video with overlaid computer graphics.


It can be supplied with a device which will allow you to fade between computer graphics and the video source, and also a mode control unit so that you can move between Amiga only, video only, background mode and keyhole modes 1 \& 2.
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The Rendale Super-8802 is a development of the basic 8802 unit, it performs the same functions, but has the added capability of also working with SuperVHS signals. The unit will allow the user to cross fade between the Amiga and video signal. In addition, some basic wipe patterns are provided, and also a fade to black option. Mode control is also provided via hardware.
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This is a brand new piece of kit which will improve the capabilities of the popular Rendale 8802 Genlock. This unit allows you to cross fade between the Amiga and video signals, so that you can gently fade computer titles in and out. Also, the ability to switch between the various modes offered by the 8802 is provided. The required mode is selected by a push switch, giving smooth, flicker free transformations.
The FMC unit does need to be soldered into the 8802, we can do this at our factory if required.

## UPGRADE PATHS

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oad, ark ntre, on, 10466 47403

While the photographer set up his shots, Greg Malcangi quipped: "You're lucky to get a picture of us, a Scottish newspaper us offered us thousands for a picture of us together mor we announced our engagement."
Sach is the fame of Evelyn Glennie, especially in culd, where she was recently voted Scotswoman of Er Deade. When newspapers start taking an interest in 7our private life, you can pretty much say you've antied.
Ale was born in Aberdeen, where she studied timpani Cic age of 12, and in 1982 she entered the Royal Aadeny of Music. From then on it was literally hoppas from one award for excellence to the next and onto an platform with some of the world's most famous masidins.
She's played the Hollywood Bowl with the LA 7narmonic, and in Japan, Australia, and New Zatland.
Berause nobody really does what she does, everytings Evelyn does is a first. You may have seen her on Et TV as networks in the UK and USA have all done documentaries on her.

She's on radio all the time too, not only performing hut also talking about her extraordinary life and work tir cumple she was on Radio 4's Desert Island Discs where famous people get to choose the records they'd tile lo a desert island.

Now she's so famous, composers are actually writing tins specially for her, like Dominic Muldowney, John Dankorth, John McLeod, and Richard Rodney Bennett. Bucically if she hasn't worked with them, who are they?


Evelyn is a slight, soft spoken woman who laughs readily and pays close attention when other people are speaking, and although slightly reticent to talk about herself, is very enthusiastic about her work and music in general.

I asked her how this fame affects her. Does she mind being so famous?
"When I decided to become a musician I hadn't thought about becoming famous, and that's still the case. I'm just interested in my work and doing the best I can, and I don't want extra pressures.
"All my aims are personal ones. If I reach them, fine, if I don't, that's also fine. If I decide to give up music tomorrow I don't want the whole world coming down on me.
"It's good for percussion that there is the recognition. If there's any recognition of what I do then I see it going towards percussion. A lot has to be done for solo percussionists, that's my area if you like."

Does she want to expand the
 number of styles she performs in or does she want to stick with the classical style?
"I'm very interested in spreading my wings a lot more and working with all sorts of musicians. Still keep the solo percussion side going, that's my main thing, live performances. But the compositions and things is something I want to explore too."
As a percussionist, and a particularly well travelled one, Evelyn has more in common with so-called world musi-
cians than a lot of Western musicians who try and fail to meld the many styles from around the world.
"When people ask me 'what sort of musician are you?' in a taxi or something, I'Il say percussion and they'll say 'oh, which group do you play in?'
"I'm not a classical musician, I'm not a jazz musician, I'm just a musician. I'm interested in all styles of music."

People, especially people who work for newspapers, love to categorise, and Evelyn defies categorisation. Writers tend to latch on to the fact that despite being in an almost exclusively hearing profession, Evelyn is in fact profoundly deaf. Does this annoy her?
"Nowadays it does, especially in this country. I get a wee bit frustrated now if it's constantly brought up. I usually make a point to newspaper journalists who are basically talking about your life. I'II mention it but that's not going to be the focus.
"No matter what you do they'll write what they want. But abroad quite often the reviews for concerts will not mention anything and quite often reviewers will not know, and that's good for me."

In fact at some concerts overseas nobody present, not the audience, the orchestra or the press, will know about Evelyn's deafness. This is the way they like it, as the risk is that someone will say the music is good "for someone who's deaf" rather than just the music is good.

Evelyn does, however, have the career of someone twice her age, and her credits are stunning by any yardstick. But as I said she puts all this back into music, teaching young people about music, and demonstrating through example that musicians are hard working people and you don't just turn up on the night in a flowery dress.

Practice looms large in the life of any musician, more so in the life of a top musician, and Evelyn is no exception. The next evening she was due to do a performance and was practising hard when we arrived, and doubtless

## PROFILE


would be when we left. She is learning new instruments all the time, some old and traditional, some new like the MIDI DrumKat in the studio. In fact she doesn't know how many instruments she can play these days - she's lost count.
"A lot of them are related. I play all the main instruments, all the tuned percussion, timpani, various drums, a lot of hand percussion, bodran, lots of things.
"I constantly collect instruments, and if a piece requires an instrument I've never come across before, I'll try and find out about the instrument, and find a specialist on that instrument and learn from them."

Greg relates the learning of a new instrument to learn-
ing a computer language
"If you've already learned Amos, then Basic or Database Management Language is that much easier to get into. And the more languages you learn the easier the next one is to learn, the more points of reference you have."

One of the reasons I was talking to Evelyn was that she and Greg have recently completed their studio, which is entirely run (business and Midi) using Amigas.

The A4000 nestling in the studio among the racks and digital recorders runs everything via Bars \& Pipes Pro 2. Although the studio was made so they could record and rehearse, Evelyn composes using something far more sophisticated - the human brain.
"A lot of it is just done in my mind. Nearly all the pieces I've written are stored in my head. I haven't really got around to writing them down, which I really have to do now.
"Sometimes I compose at the keyboard, but very rarely do I compose at the marimba or something like that. I'm really keen to explore TV music, documentary and film music because I love to write just little snippets of music. I'm basically a composer with a tiny ' $c$ '.'

She holds her forefinger and thumb about two millimetres apart. Despite this opinion of her composing skill, she's hoping her new Amiga-based studio will help her to explore the world of music for TV and films at her own pace.
"And if in the future I consider cutting back on the performances I can always work from here. I think I mentioned this to Greg and so we thought we'll get very basic stuff, and the idea grew and grew until Greg took over and left me way behind with the equipment."

So now they have a studio in which they can record everything from classical CDs to hard grungy rock. You think they wouldn't like that? Greg is anxious to work with all kinds of players, as long as they're into quality rather than quantity.

I asked him if he thought using Midi tripped up the musical process by placing too many options at a musician's disposal.
"I think you've hit the nail on the head. I think Midi is designed to aid those people who aren't musicians. Midi is actually very difficult to work with if you're a musician. We had problems.
"The quantise was off, no metronome or anything and Evelyn just played, and of course when we came to edit something it was impossible because the music notation


Evelyn Glennie and Greg Makangi in the studio Greg built
was all over the place. With standard classical music not tion it would be relatively easy, but with Midi it tak everything very literally."

With regular music it's all very loose, as far as the of the world is concerned, but very tight within itself.

And as Greg pointed out, it's the little imperfectio that make classical music a performance rather than squeaky clean record.
"I'm currently talking to the people at Blue Ribba
classical to hard grungy rock

## They can record everything from <br> 6

 Soundworks about Bars \& Pip because it's very much geared towan the Midi musician, and I think we one of the few people that are workir with sequencers on the Amiga that a musicians."So we're trying to work out way of keeping the classical notatior straightforward while allowing the freedom underneath it. I think the war forward is for the notation to be quan tised without the music itself being quantised. I have say Blue Ribbon are very helpful.
"It's getting there, but time signatures are still a problem. That piece I played to you earlier was in 10/8 and the machine that's broken down into $1,2,3,1,2,3,1,2$, 2. Getting a definable metronome is something Blue Ribbon are working on."

As far as Greg is concerned, on the Amiga Bars \& Pipes
is the best sequences
 available, and he's trie them all. He was always an Amiga fan, and he wanted to do it all using? the Amiga if he could.
He demonstrated why using the A4000. While running a sequence through the Midi stack he brought Superbase Pro 4 to the front and did a sort on the hundreds of sounds in the Proteus modules.

The music didn't stop, and so multitasking increases the productivity of the studio without causing all the hang-ups you'd get with the Mac or PC, which would stop the music while you worked on the database of sounds or Evelyn's blistering performance schedule.

If the phone goes while he's laying a track down to the digital recorder, Greg can print out a list of tour dates and do it all there and then without holding up the session.

All the equipment in the studio is paid for, and Evelyn's career as a performing musician ensures that they can keep the place running even if they don't get anyone through the door to record there.

It does mean that they can choose their customers and allocate quite a lot of time to them while they're there. One thing Greg is keen to do is make sure he keeps a wide spectrum of work, so he'll be cutting a CD for one of Europe's top brass ensembles, but also a demo CD for a local rock band.
"What it means is that I can really be certain of the quality. If I get someone coming in who hasn't got a great deal of money, but has got a lot of enthusiasm and what I think are some great ideas, I can say 'Look, we'll do if for what you can afford' if it takes a week, if it takes two weeks. You pay me for the finished product.
"It does mean I'm losing money compared to a conventional studio, because there'll be a lot more down time, but as I said before that's not a real concern.
"If for example you've got a reader who's come up with some particularly good ideas on Bars \& Pipes, and yet they haven't got the couple of thousand pounds a week that a studio like this would expect to charge, that might not necessarily be a problem.
"There are limits - I can't spend four weeks on something for $£ 200$, but having said that l'd be reasonably flexible."

Publicity isn't a problem due to who Evelyn is. But on the other side of the coin, it means that any work leaving the studio has to be of very high quality, to match her reputation as a quality performer.

If she had to name one event which would be her greatest achievement, what would it be?
"If I had to name one event it would be the carnival in Rio de Janiero, Brazil."

Evelyn is one of the few Europeans who's ever been allowed to compete, and even then she had to wear the male costume and wear dark make-up to make her look like a Brazilian.
"Generally though I'm happy to be the first full time solo percussionist, which means there will be others now

For their upcoming TV wark. Bars \& Pipes is the acel for the job, as the
lue Ribbo 5 \& Pipe hink we'r re working

## ftom piano, violin, guitar or drum kit."

Pause while everyone laughs their socks off.
Tm not really having a go at sound engineers, because Sey have to get the best sound they can in the time."
So as ever the commercial aspects of music as a business begin to obscure the act of creating a piece of art. They have mough time to get everything perfect.

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## APPLICATION S/W. <br> Wordsworth 2 .



HARDWARE

andard 14 in monitor into a remote contal colour television, and makes a very ctive switching box, allowing choice ween assorted video signals. It also aries to convert an old TV into a remote mocllable set. The innovation is in the - - -it) to add a computer image inset into 1TV picture and vice versa, and it is this intre which I think offers really exciting matities.
There is of course the obvious, in that an can enjoy playing a game, or typing a virr, while keeping an eye on a television cramme. This could just be a precauto to ensure you catch the beginning of But crucial episode, or when preparing to rand a particular programme.
Temember, with PIP you can listen to En TV audio output from your monitor, wite using DPaint, for instance. It may mell be that you just wish to see a particu-- tem on a programme, and that rough tenitoring will avoid you listening or wathing to the unwanted information.
Using the unit conversely, you may IIt be waiting for your Amiga to complete a computation, complete a ray-tracEt or update a spreadsheet, in which ase, the press of a button will reverse the -uge allowing you to watch a TV or video source, with the Amiga inset as a Firriew. You can then successfully monithe the progress of the Amiga.

## INFRA-RED

These may well be sufficient reasons in themselves to warrant you buying the IIP, but to me, what is far more interesting is the possibilities this facility offers in broader applications.

Not long ago I was reviewing the Sritchsoft I/O port which affords control baclities to the Amiga's parallel and joystick ports. I still hadn't returned the bear, so, out it came, and after an hour of edtling with electronic components and an old security camera, I had rigged up a connector to the infra-red sensor on the alarm outside my house.

Now, as the sensor (one of those fitted below a twin lamp) is triggered, the I/O port detects it, and switches on the old necurity camera.

This in turn is connected to the I/O port, via the mains controller unit, and on to the PIPView. All of this system is tather Heath Robinson, but as I am working on my Amiga, my 12-year-old son


## (Turn your

 monitor into a remote controlled TV in minutesapproaches the back door of my house. The infra-red sensor is tripped.
Voltage change is detected by the I/O port, which switches on the camera and the PIP, and there is my son unknowingly demonstrating one of the cheapest and effective security systems I have seen.

Remember, this device could equally work with your Amiga running through your TV. In effect you could have a continuous security monitoring facility as you watch your TV in the evening.

This would be a particularly useful device for anyone living in a remote area, or a person living on their own. Alternatively, a small business could
utilise three cameras, and continually move around them checking different locations, using the PIPView.

Using the same basic principle, a camera could be pointed at a baby's cot, and sound and vision monitored during the course of an evening, displaying the sleeping (or otherwise), little dear simply by calling up a picture in picture image on any screen.

Aside from security applications, the PIPView has much greater potential as a device to enhance the nature of presentation material. Demonstration videos could easily be made, which utilise the inset images to illustrate visually the nature of the message or procedure being exhibited.

An example might be the kind of video often seen in big electrical stores, which advertise a new kind of electrical appliance.

The main screen could be showing a broad overview of the equipment in use, while the PIPView could zoom very close in on particular features which the manufacturers wish to highlight.

Anyone who uses and Amiga to create

videos could include playback animation, or zoom detail within the insert, then record back to capture the two images.

This is a piece of equipment which I was initially hesitant about reviewing. First thoughts are that it is just another techno-gimmick, offering clever effects, but not really of any use.

## CIRCUITRY

On a banal level, it allows you to use your Amiga and monitor two other TV channels simultaneously. It a will even allow you to record from air, and actually eliminate the commercial breaks from the recording, due to sensing circuitry in the unit.

At this level of performance, it is an accessory worth considering. However, I believe PIPViewhas a very rare quality among the myriad of paraphernalia constantly appearing on the computer scene, and a characteristic which I readily salute.

That quality to which I refer is the effectiveness of its use. The PIPView can be many things to many people - only the imagination of the user will eventually discover both its capabilities and its limitations.

## The bottom line

EASE OF USE 7 IMPLEMENTATION 9 VALUE FOR MONEY 7 OVERALL 8

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Before the inevitable stroll through the huge and slightly terrifying features list, now might be a good time to describe what the new Real3D is all about, and who it has been designed for.

The answer to the first question is probably animation, with the main thrust of the new release revolving around a plethora of new techniques which without doubt make the program the most comprehensive animation tool on the market.

As for the second, the answer is twofold. For the professional willing to invest the considerable amount of time needed to master the system, it offers a state-of-theart platform that with practice will generate images that simply aren't possible on any other platform.

For those who don't fit into the first category, the user base is likely fall into two spheres, with the first being the dedicated ray tracing enthusiast for whom time and money is nothing compared to their addiction.

## Coffee table

The second could perhaps be described as the coffee table professional. In short, the kind of person who will buy the package, play with it once or twice and then leave it lying around ready to inspire dreary conversations about what they would do "if only I had the time".

Although a rather brutal introduction I feel it's justified if only to counter the inevitable feeding frenzy generated by the bandwagon of Amiga journalists who often feel duty-bound to scream the praises of a package without giving the punter and the application of his or her latest investment a second thought.

In short Real3D 2 personifies professional Amiga software. It isn't a point and click paradise, it doesn't hand you the images on a plate and as a result demands as much attention as it does hard cash.

Thanks to the intuitive design of most Amiga releases we've all become a little spoiled when it comes to user friendliness. Real 2 gives no quarter in that department


Real3D v2 promises to be the most complex modelling and animation system ever to hit the Amiga. Paul Austin grits his teeth and takes it on
A classic image from the new Real3D featuring B-splines in all their glory

## Even

 better th incoffering a unique approach which puts the ball firmly in your court. After a little over two weeks working with the program I'm not in the least bit ashamed to admit that I've only begun to scratch the surface - however that doesn't mean I'll be offering a regurgitated press release which certain magazines consider a format for success.

A classic example of the program putting you in the hot seat is the new and


Spot the delliberate mistake within what is sure to become a familiar image
totally unique interface. Within this initially alien environment almost anything goes and it's up to you what does, and what doesn't. Instead of the old-style multiple screens of its predecessor you're provided with a collection of components which can be added, removed, sized and placed to your own design.

Of course this doesn't mean you're provided with a blank screen and expected to fill it, as initially you're offered a default layout containing the three key elements to the interface.

They are the view, select and tool windows. However before a detailed description of each, a brief overview of the main principles of the new environment would be wise.

We're all well aware of the multitasking skills of the Amiga but the new Real attempts to take multitasking a step further by offering an asynchronous, no wait state design.

In English this means each window behaves as almost a program within a program with the various element multitasking independently making it possible to render in one view while editing the mapping attributes of the object - ready for a simultaneous render from a different angle in another window.

To take things to their extreme, you could have half a dozen view
windows all rendering in different styles simultaneously. In short, no matter how fast you apply changes the program will keep track, running each as a background task. Taking things further still, you can open as many environments as you wish providing a series of designer screens with their own views and tool selections, each remaining completely independent of the parent and

After two weeks working with the program I've only now begun to scratch the surface...


even running in a different resolution.

This is ideal for specialist animation environments, freeform modelling, point editing or emulation of other programs the old Real, Imagine, Caligari and so on. A touch of overkill perhaps but it's all available if there's a need.

Still, however ingenious, it isn't with-

$\$$ resolution screen modes look great but they can take an age to render


B-splines offer great results but again rendering time can be a problem

## than the

out its faults - a testament to this being the two days spent organising environ-E-ents and attempting to eradicate quirks and apparent bugs when running the program on hi-res interlaced and productivity machines.

This problem could have been avoided If only the authors hadn't chosen to supply all the example environments in hi-res only.

To return to the description embarked upon earlier, the obvious place to start is the view windows, which due to their introspective nature provide a unique set-up screen to define not only what appears on-screen but also where the output of any renders will be targeted.

Once active, a hot-key or pull-down reveals view's specific requester, ready to
render the image either to the window, a file, or an external display device, the selection of which can be defined via the main interface. Like Real's old render screen, each view can be customised with various options for lighting; the degree of antialiasing; the background colour - whether it be a gradient or solid; the output file size and location; the application of environment and background texture mapping and so on.

Within each output option you can also define the quality of the image to be generated from six presets,

## Keep on moving

Animation is arguably the biggest beneficiary of the new release. Like the rest of the package, animation has undergone some dramatic changes, not least of which is the total redesign of the way in which the program handles the animation process.

In the past, Real3D operated strictly on a frame-by-frame basis using key frames and tween points. Now however the programmers have cast aside the old frame format completely in preference for animation over time.

The advantage is that re-computation of a sequence is now simply a matter of adjusting the relative time of the element or scene thereby allowing the software to re-interpolate the sequence automatically.

When this new approach is combined with the hierarchical combination of object, mapping and animation, you arrive at a very logical, clean and self-contained approach to problem of complex animation - and believe me some of the program's anim techniques can produce very complex animations indeed.

Needless to say, due to the variety and complexity of the anim options you're likely to spend just as much time mastering the various animation techniques as you model the various components of the scene.
To illustrate the various anim options here's a brief rundown of the available methods. Obviously basic motion via paths has been included, in addition to more sophisticated options allowing shape modification to produce undulating organic forms,
There's morphing - possibly in conjunction with textures; skeletal anims, which provide a common structure for related elements; and of course inverse kinematics - ideal for combination objects which interact to produce the illusion of joints such as hands and fingers.

On top of this comes the program's particle animation system which allows the addition of real world effects such as gravity, velocity, spin, mass and surface friction.

As a result, pool table anims will no doubt be the in-thing as the virtual cue ball crashes into the pack, automatically sending the balls spinning across the baize interacting with their counterparts just like the real thing.

To put the anim options into perspective, almost 70 example scenes come as part of the package, each of which illustrate a different technique,

They include (deep breath) paths; rotation; sweeps (alias tracking); size manipulation; stretches; direction; control curves; skeleton effects; inverse kinematics; morphing; transformations; radial force (alias gravitational effects); directional force (such as turbulence); tangent (centrifugal force); collision detection; creation (for example boiling water or wriggling snakes) and finally liquids (whether they be single drops or an entire ocean).
namely draft, environment, lampless, shadowless, normal and outline, with the variations providing everything from quick rough renders which ignore any texture mapping the ultimate quality the software can provide.

The somewhat less conspicuous but equally essential select window is next under the microscope and it's from here where the underlying structure is applied and edited.

Old Real users will already be familiar with the program's hierarchical approach to the modelling process and thankfully this has been retained in the new version complete with a few embellishments of course.

In a nutshell, Real organises its scenes in a similar manner to a disk, with a root directory containing various sub directories which in the case of Real translate into the various objects and their components.

In a slight break from tradition, literally everything now becomes part of the hierarchical approach with texture maps and even animation all appearing in the overall structure.

## Target objects

For example, adding a texture or multiple textures to an object involves simply placing it/them within the same level as the target object - thereby appearing as objects themselves with names such as wood(T). These can be edited when necessary while still remaining unique to the object they accompany.

The real beauty of this hierarchical approach is that if other objects or subdirectories appear within that level they automatically share the same mapping attributes without any additional editing on the part of the user.

A similar approach applies to everything else with even an object's animation attributes appearing as a pseudo object within the selection window.

In short, it's a very neat, logical and


An image rendered by Real 3DClassic. If your need the animation power of the new package spend the extra cash but otherwise its predecessor is a real bargain
natural approach - and of course multiple windows mean you can spotlight parts of the structure in one window while still retaining an overview in another.

Moving on to the last window, we come to the tools which although similar to the selection of icons found in the original Real do hold a few surprises, not least of which is the disappearing hot-keys which I - and many others - had become so familiar with.
One of my main complaints initially was that many of the original hot-key short-cuts were missing or had been hijacked. Thankfully however they had only migrated to the tool window where they now appear as icons offering all the familiar cut and paste options thereby eliminating the tedious trek through the enormous and somewhat confusing array of pull-downs. In total, 13 categories of tool are available providing all the familiar primitives, Boolean and freeform options in addition to mapping, editing and much more. And because the tool


Not incredible quallity but state-af-the-art animation to boot!
windows also share the internal multitasking design you can open a series of user defined tool boxes with as many or as few tools as you need.

Like its predecessors, the new Real is a solid modeller with a heavy emphasis on primitives as its primary building blocks. As a result a huge range of shapes can be created from preset forms, either by selecting the object style from a pull-down or more often by clicking on the appropriate tool icon. Once an object is defined whether it be a prim, tube, polygon, polyhedron or whatever - it can be move, scaled, stretched, rotated or perhaps edited more dramatically courtesy of the program's Boolean operations; a feature which allows one object to act as a cutting AGA with all screen modes supported - even Ham8. is the fastest ray tracing environment on the machine. ence in relation to its predecessor. compared to complex B-splines. a package screamed out for an 060 processor, this is the one! all image quality on the market.
implement on another
Depending on the Boolean operatio chosen, chunks can be remove from the target object or perhaps the orig? nal removed completely leavin only the intersection of the tw objects behind. Better still, Booleans ever offer the ability to leave the texture and attributes of the cutting tool on the target surface.

If Booleans are not enough, the program also provides freeform tools which can generate much more complex shapes to be edited with a selection of almost 100 tools specifically designed for freeform objects.

At the forefront of the organic side of the software comes the new B-spline surfaces allowing ultra smooth freeform curves, guaranteed facet free - not a single polygon in sight!

As you can see from the head image the quality offered by B -splines is unbeatable but like many of the power features it has a dramatic impact on rendering - at least quadrupling the time taken to generate similar shapes created by the program's primitive, compound and lathe tools.

## Macros on clisk

Another impressive feature of the modelling environment is the program's Macro feature, an option which allows any actions to be recorded and then repeated automatically as many times as necessary. Better still, such processes can be stored on disk or even appended to a hot-key or tool icon to produce designer automated tools.
On a more exotic note, Real also provides a built-in fractal generator for both trees and landscapes, both of which come


Animation takes on a totally new direction in the latest release

## Rendering in detail

As you can see from the screenshots, the program offers full support for the
However, it must be stressed that actually operating in such resolutions does mean a dramatic increase in rendering and updating times. While on the subject of time, this is probably a good time to mention Activa's claim that the new Real

This may indeed be the case in certain situations, however when the program's power features are applied I must admit to experiencing little or no differ-

Prime candidates for painfully slow rendering include the much-hyped soft shadows and motion blur, which although dramatic, do cause huge increases in rendering time. However, having said that, even these pale in significance when

Even with the specially optimised 040 version - claiming rendering times eight times that of its 020/030 counterpart - I still wasn't over-impressed. If ever

Leaving the rendering time aside, it must be said that the quality of the finIshed product is spectacular, boasting arguably the best antl-allasing and over-

When this is combined with the respectable rather than spectacular times and the unique effects mentioned above, you can't fail to be impressed.

## Conclusion

As you've probably guessed, the new Real is very serious stuff which offers the most advanced ray tracing environment yet to appear on any desktop machine.

As far as the manual and assorted support is concerned things are a little mixed, with a manual which is roughly three to four times the size of its predecessor. As for readability it scores slightly higher than the Imagine2 manual courtesy of a wide selection of step-by-step examples.

Nevertheless it must be said that the authors often assume a bit too much of the reader - especially the beginner.

On the other hand, what the manual lacks the huge selection of example animations, scenes and mapping demos more than make up for.

In fact, once you've mastered the basics, exploring the examples can be a much quicker method of picking up the finer points. In addition to the support files and manual, a built-in hyper-text help system also awaits if quick reference is required.

Continuing on the theme of support the package comes with a familiar selection of display and conversion utilities in addition to the aforementioned huge variety of example images and scenes.

After the rollercoaster ride of the main article, hopefully your mind will already be made up. If not, here's a woefully inadequate potted opinion.

For any would-be investor the question has to be is the six months needed to really master the package worth the new features and the $£ 400$ asking price?

For the professional I'd say the answer is yes, but for those new to ray tracing, Real3D Classic at roughly a quarter of the price is a much more attractive option - which in time could lead on to an upgrade when your requirements and skills demand the attentions of its muscle-bound bigger brother.
refracting light which means that if you create a flattened oval object and add the necessary attributes to create glass you'll produce a perfect lens which could be used just like its real world counterparts.

Obviously when the attributes of an object - whether it be chrome, glass, plastic or whatever - are combined, the object colour and any maps that may have been applied can lead to spectacular results.

However that's only the tip of the iceberg courtesy of the program's 12 mapping techniques which can make the impossible an everyday event with features such as bump and clip maps all adding to the overall power of the most comprehensive mapping system in the business.

## Morphed

On a personal level I'm impressed most of all by the ability to blend maps together on the same object creating hot-spots for the materials in question. In addition materials can also be morphed or animated by simply appending sequential file names.

Unfortunately it's not all good news when it comes to mapping, and although flagged as one of the major selling points of the package, the program's new procedural and mathematic textures are likely to remain beyond most of us for a long, long time.

The reason is the appearance of the dreaded RPL programming language. In order to use the aforementioned features at least a rudimentary understanding of the RPL is required. Based on FORTH, the Real3D derivative isn't exactly what you'd call easy reading.

After a couple of hours wading through the RPL I can guarantee nonsmokers will be reaching for the Woodbines while the alcoholics leap from
the wagon like lemmings from a cliff. If the program's authors really think that a perverse interest in higher mathematics and programming in general is infectious, I'm afraid they're sadly mistaken.

By nature most artists recoil at the prospect of programming and quite frankly at $£ 400$ a time they shouldn't be expected to suddenly develop an interest.

As a result l'd be very surprised if more than one in 100 users will ever make serious use of the RPL - a sad fact because not only will the new mapping options largely be ignored but also the advanced customising potential of the language throughout the package.

In reality for most people applying the RPL will be a matter of downloading files or perhaps buying in third-party RPL support software as the program gains momentum.

SYSTEM ESSENTIALS


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# Blame the parents! 

Suve just read the feature "Sex, lies, and video games" and I would like to bring up a piet that no one has addressed. Who is it that buys most of these games? Most of the time 45 the parents.
During Christmas, how many children went and bought Street Fighter 2? Now comDre this to the number of parents who bought it for their children. It is unfair to blame te software industry totally for these claims made by the press.
As it is usually the parents who buy games software, don't you think it is their choice to thow their children to play these "violent" games?

Colin Cassidy, Rothesay
I Ln't know of any statistics which show the relative number of parents and children who buy pons, so your contention that parents buy most of them must remain unsubstantiated. Whether or air purents do buy violent games for their children is, however, a side issue.

The lavv as it stands is more a supporting structure for loopholes than a guardian against tswoury softuare, and the most sophisticated hard sell advertising tectuniques are levelled at chilbrw coery time they tune in to TV after school or on Saturday morning.
In such conditions, to spout from on high about parental responsibility and choice is a bit like tiicising the Light Brigade for an unsuccessful charge.
Most parents will, of course avoid games with titles like Chainsaw Massacre II, but the one you -ntion is no more or less violent than many others on the market at the moment, and its title no nare alarming.
So much hype and peer pressure was built up around Street Fighter II that many parents must are been immensely relieved when it was finally released so they could buy it and shut the menous little beasts up for ten minutes.
Can you blame them?

## Disk decisions

I have some questions which I would be rery grateful if you could answer.

- Why did you drop the second disk from the magazine just like Amiga Format did?
- Why don't you have playable demos of new games on the CoverDisk?
- What software packages have you got on forthcoming CoverDisks?
- Do you know of any books about GFA Basic?

Thank you very much.
Peter Armann, Leicoster

We dropped the second disk because it was becoming an expensive exercise to publish two disks and push up the price of the magazine when the supply of widely popular software was dwindling.

It would be pointless to stick an extra disk on the cover for the sake of doing so, especially if less than half our readers wanted the soffaure it contained.

Playable game demos haven't appeared on the CoverDisk since about 1989 because they take up most of the disk and there doesn't seem to be much demand for them from our readers.

Yours is the first letter for many months which $f$ can remember calling for games demos. though the debate is aluays open.

If enough letters are received on one side or

## Ezara Surfis Pomeg

 with getzing printer drivers to appear in the printer preferences editor, even after copying the printer driver to the printers drawer on the Workbench 3.0 disk?

All you need do is copy the printer preferences editor on the Extras3.0 disk to the Workbench 3.0 prefs drawer and use it from there. The same goes for the other prefs editors. Hard disk and double floppy users don't suffer this problem. D J Andrews, Little Stoke

Thanks for the tip. Our techie bods have already answered a few enquiries from users on this problem, but neglected to mention the need to copy prefs programs to the prefs drawer, possibly because they thought this too obvious a step.

Just goes to show you how important the end user's perspective on a problem can be, eh?
other of this question, we will look at the game demo situation again, so keep those missives coming. I can't answer your third question as it's an industrial secret, but for help on your fourth query you might try Computer Manuals in Birmingham. They cover most areas and can be reached on 021-706 6000 .

## Protext prefs puzzler

At the beginning of this year, I bought an A1200 as an upgrade to my A2000, and as I have a large collection of application software on my old hard drive I consequently purchased an IDE drive for my A1200.

At that time it was not possible to obtain an "official" hard drive upgrade, so I took the risk of installing it myself. I appreciate that this voided my warranty, but Commodore's stupid policy left me no choice.

A friend of mine has an A4000, so I used his software to install Workbench 3.0 on the hard drive and all seemed well until I installed Protext v4.3. When I attempted to execute Protext I encountered the same problem as Mr McKechnie did in his letter published in your April issue.

I am rather surprised at this as I installed Workbench using the method you recommended (an A4000 install
disk). However, I did some investigating of my own and came up with a partial solution that is not entirely satisfying, but which works.

In the startup-sequence is a command "IPrefs" which, I believe, initiates the Workbench with the user's preference settings. If the startup-sequence is executed without IPrefs, Protext functions perfectly, so my solution is to make a second startup-sequence without the offending line.

Once this has been done, your must boot with both mouse buttons held down, select "boot with no startupsequence", and then type:

EXecute s: Startup-sequence.copy
Workbench will appear as normal and Protext will func-
tion correctly. I realise this is not a complete solution, but
 it does allow one to use Protext from a hard drive-equipped A1200.

Simon Kerridge, Brighton
For the past month one of our technical gnomes has been trying to sort out the Workbench 3.0 hard drive solution, and this sort of thing is all he's come up with. It appears that Protext has a problem with the new display modes and the only way to get around the obstacle is to boot without invoking IPrefs.

Of course a more elegant method might be to include an ASK statement in the startup-sequence or use a utility such as MBPress (which was on a CoverDisk a few months back) to detect for a mouse button press during startup.

## More A1200 thoughts

I bought my A1200 back in November and since then I have been reading with interest all topics and letters about the A1200, compatibility with games and external drives, and so on, so I've done some experimenting with some of my mates' utilities and games.
Most work without problems, and choosing the correct chip set and display option gets the game working on some of the reluctant ones, but some are still not usable even after trying all the possible options.

The best I have found is to disable the CPU caches and choose the enhanced chip set before booting the game.

Funnily enough, the age of the software seems not to be important, as I have tried stuff going back to 1988 which works fine.

Some of the games I have managed to get to work I have seen in some software lists, and even some magazines, as not working on the A1200. These include Fire and Ice, Switchblade II, and Lure of the Temptress (though I've only tried disk one of the latter). Newer releases such as Nick Faldo's Championship Golf work fine.

As for fitting an external floppy drive, I phoned Power Computing for a PC880B and was told that the problem with A1200 wiring had been corrected and there was no longer a problem with compatibility, so I bought one. No problem it's much quieter than the garbage disposal unit inside my A1200.

Speaking about noisy drives, I read an article about misaligned drive heads causing disks to fail to load. I have experienced this myself with Crystal Kingdom Dizzy. My machine gives and on-screen message saying "Software Protection Failure", but my mate's machine loads it perfectly. Is this or could it become a serious problem, and should I return my machine for repair?

David Hurst, Topsham


## A vector too far

Am I the only reader of your magazine who's interest in fractals measures somewhere below absolute zero? This area of mathematics has become something of a party bore over the past few years, with seemingly constant reviews of fractal landscape generators, fractal screen blankers, and fractal this that and the other.

No-one who works for Amiga magazines has twigged that most of us don't care a hoot whether it is mathematically possible for farting butterflies in Brazil to cause share prices to fall in New York.

I mean, I don't ask the man in Dixons to draw me a circuit diagram and explain the behaviour of air particles subjected to sound vibrations when I buy a hi-fi, so why do reviewers presume that I'm interested in phongs and gourads and other members of the Tedium Hall of Fame?

Do you really expect me to gasp in astonishment when you let drop pearls of wisdom about Mandelbrots, Julias and Lyapunovs?

The three fractal stooges sound more like a dodgy legal firm than a set of interesting computer concepts. Think about it: Mandelbrot, Julia and Lyapunov, specialists in cases of divorce caused by mental torture through repetition. Give us a break, guys!

Peter Hunter, Coldstream
Phew! You certainly put your point across. In fairness to AC , you might have mentioned that we've resisted the temptation to talk directly about fractal mathematics for a long time, and only looked at the area when a program such as Vista Pro 3.0 uses fractal techniques to do something interesting.

Other magazines tend now and again to pick a subject and extract as much tiresome trivia as possible from it, but despite the temptation we've resisted the urge to indulge in this sort of page padding. I hope our readers agree...

You seem to have reached the same conclusion as many other A1200 owners in that you have discovered the much vaunted compatibility problem isn't half as bad as it was originally painted by some, and certainly shouldn't put people off the new machine.

Your experimentation seems also to have led you to the most useful method for ensuring compatibility, so you might not require
the software list published in this month's Gamer - but take a peek in case it contains a game you were thinking about buying.

Misaligned drives can be a problem when they come up against heavily protected software which uses non-DOS disk structures, but the problem is seldom bad enough to cause loading problems. I would suggest you return the machine for repair as soon as possible.

## In praise of Pirates

I recently bought the game Pirates from a second-hand car boot sale. When I returned home to examine my prize bargain, however, I was dismayed to find that part of it (the map to be precise) wasn't there.
I contemplated suicide, decided this was too drastic, and phoned Microprose instead to see if they could help. The phone gave but two short rings, then a friendly voice said "Can I help you?". I told her my problem, to which she replied "We have one in stock, I'll get it sent off to you."

Lo and behold, the missing piece of paper flopped onto my door mat the very next day. It is good to see that customer and after-sales service is still important on occasion and I congratulate Microprose on a job
well done. On another note, I am contemplating trading in my old A500 and investing in an A1200, but I have heard that some software doesn't work on the new machine. Oh, and congratulations to Amiga Computing for producing an enjoyable adult magazine for older Amiga users. You wouldn't by any chance know the average age of Amiga owners?

Richard Henderson, Leyton
The average age turned up by our reader surveys varies a bit, but is usually well into the twenties and there are a significant number of people over the age of 30 among the AC readership, resulting in a much older audience than that enjoyed by some of our
distant relations who specialise more in the field of platform games and the like.

We don't write for a specific age group, however, and a great many younger readers enjoy the magazine. Let's just say we cater for a certain type of reader who values the depth of editorial coverage we have always striven to make our hallmark. Your comments about Microprose are applicable to many Amiga suppliers these days, but it's always nice to hear positive feedback as opposed to tales of negative experiences.

Speaking of negative experiences, your choice on whether or not to upgrade to an A1200 should be eased by the comprehensive games compatibility list you can find in this month's Gamer.

## Pinball wizard

Having always been more than al trifle cynical regarding the playing of computer games (you know, they're a substitute for sex/going outla life ad infinitum) I write to confess to a curious change of heart.

After some highly absorbing sessions with Pinball Fantasies, which must be the most realistic pinball simulator on any format, I now have at least a dim comprehension of what all the flippers, lights, chutes and bonuses mean, and can make a game of three balls last for more than 60 seconds.

Achievement enough in itself, but the real test came when I found myself with the usual bunch of friends in the pub last Sunday, and someone suggested a game on the old pin table.

Well my turn came around, and you can imagine my glee as the oversized ball-bearing zipped around the table, kissing bonuses, gleefully rolling from chute to flipper to million jackpot and back again.

Before I knew it, my score was in the multi-millions, my pint was going warm and flat and feeling decidedly unwanted, and my cigarette had an overhang of ash longer than one would believe to be structurally possible.

The sigh I uttered as my last ball was finally lost was far more akin to the "top sportsman robbed" kind of sigh than the "idiot fails to make any mark at all" variety previously preferred.

Not that this episode has helped me in any discernable way to achieve the sexual freedom I so desperately crave, but I fancy I ordered the replacement pint and lit a fresh cigarette with just a hint of the "treat 'em bad, make 'em mad" masculinity used to such effect in the mating rituals of top Hollywood stars and other Gilletteusing men for generations.

Who fan, Manchester
It's gratifying to read a story about a computer game which has a positive rather than a negative social effect, and even more so when a direct link can be shown between the playing of a game and the development of hand-eye co-ordination skills.

If only there was a "Six Pints and Chicken Biryani Without Regretting It" game with similar beneficial effects on the real life activity.

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Both upgrades require : Amiga $500,500+, 600,600 \mathrm{HD}, 1000,2000$, or 3000 , Workbench 1.3 or $2.0,1$ MB RAM (additional memory recommended). Two disk drives or hard disk recommended.

AmigaDOS, as you will soon discover, is computing at its purest. It is what separates real mputers from consoles; the men from be boys; the wheat from the chaff.

Learning AmigaDOS unlocks a whole Twr world of possibilities, allows anyone mach new heights but above all, it prodes a sense of achievement that no phical user interface (GUI) could ever -er. You can take pride in your work and in the knowledge it was your skill ind experience that did the job faster, eas-
will work - anything less will cause problems. Workbench 2.1 and 3.x are essentially the same; the higher version is intended for use with the AGA chip set.

Over the next few months, we'll be looking at the construction of standalone boot disks including everything you need to get an application up and running; whether it's Workbench or Wordworth, this series will show you how.

Think about this for a moment - what actually constitutes a bootable disk? Such
the same data but cease to function at all. This is exactly what older virus killers (and a lot of viruses) used to do to game disks. Swat a fly and the essence of insect still exists but the life has gone.

A boot disk is not a life form of course; it is not capable of independent thought and cannot replicate itself although such features could be simulated at a rudimentary level (this is, in fact, exactly what computer viruses do, hence the name). A lot of this is still far away,

# A k 

the
make a copy of your Workbench disk - the one you normally start the machine with on a daily basis will do. If you have added or deleted anything from this disk, then you should make a copy of the original Workbench floppy and perform the initial configuration checks detailed in your user manual, set the preferences and so on.

If your machine is equipped with a hard disk, you could use that but since AmigaDOS can be finicky it is better to begin with a floppy. Mistakes on a hard disk can be difficult to rectify.

It is essential to ensure you have the correct "keymap" set for the machine, and even if you did not bother with this previously you must do so now. This is a menu selected under 2.04 and operated from the Input Preferences screen from 2.1 onwards. Leave the disk write enabled and mark it clearly: AmigaDOS Working Disk. Now follow these steps:

1. Boot the machine from the new disk and open it.
2. Locate and open the System drawer.
3. Locate and select the icon labelled "Shell".
4. Select Leave Out from the icons menu. Shell will now move to the desktop this is a good place to have it since you're going to need it a lot.
Now the preparatory steps have been
ier and better. The series is going to teach you AmigaDOS and will be concentrating in $v 2$ and $v 3$. While these allow some of the operations to be performed from Workbench, you are encouraged to follow the steps using AmigaDOS only.

This will give you a better grounding in the subject, so no cheating. The series will assume you are familiar with basic Workbench terms such as Drawer, Project, Tool, Open, Close and so on and the various menu options. If you are at all unsure of these, this might be a good time to refresh your memory.

You will also need to know the general version of Workbench and Kickstart you are using. If you have an A500 Plus or an upgraded A500 you will be running Kickstart 2.x; later machines such as the A1200 are fitted with Kickstart 3x.

Provided your machine is not fitted with a hard disk these Kickstart ROMs can be identified from the Startup screen which shows a simple animation of a disk inserted into drive.

The version number
is shown in the bottom
left of the display. Machines bearing a static "disk-and-hand" display on s tartup are NOT fitted with the correct ROM.

Workbench should be easier to identify. Three versions are in common use with these machines and this is printed on the disk labels. Provided the version number is two or higher, everything detailed here
disks are specially prepared to start the machine. Awaken it, if you like. They make the startup screen go away and present you with Workbench, a game, application or whatever. Other than that there is nothing to separate bootable disks from ordinary ones.

Some thinkers consider a valid boot disk should contain more than this "proto boot-disk". True to an extent: but no-one doubts that an amoeba is a life-form any more than they dispute that mammals are - albeit more complex ones!

If you remove the essence of what makes a boot disk bootable, it will still contain
and at this stage we need to get over some basics.

For now, you will need:

- Your Workbench disk
- One blank disk

At this stage you should
taken, you can get to AmigaDOS proper. Open the Shell icon and you'll get a window. This is an AmigaDOS "Shell" window.

Shell is a fancy name for a single-line wordprocessor and parser all rolled into one. Each Shell will announce itself with a standard title: AmigaShell and a message to the effect: "New Shell process xx ". Don't worry if the number ( $x x$ ) shown on your machine is different from the one illustrated.

The Amiga is a multitasking environment and you can have many Shells open at the same time; the only limitation is the amount of available memory.

Process (Shell) numbers are automatically assigned by the machine - you have no control over them - although AmigaDOS will attempt to fill any free slots. If Shell numbers 1,2,3 and 5 were already in use and you opened a new Shell, the next Shell would open as Process 4. Don't fret, it just works like that.

On the next line you'll see something called a "prompt". As before this may look different on your machine - but it will be there. The prompt is separated into four distinct parts:

- The current process (Shell) number as just described.
- A full stop. This is called a delimiter it's a form of punctuation which breaks the line up and makes it easier to read.
- The current directory. This will probably (but not necessarily) be showing the name of your boot disk followed by some more punctuation - the full colon (:).
- A right-handed angle bracket (>).

Just to the right of the prompt is a small square blob. This is known as the cursor and shows that AmigaDOS is ready to accept input (if the cursor is shadowed, make sure you make the window active by clicking inside its boundary).

Forget about all that for now. For the sake of this series we'll simplify things a little and adopt convention.

## 1)

This prompt is universal. It just means whatever follows it should be typed in at the keyboard. That's what AmigaDOS is all about - leaving behind the "buttons and ball" approach and discovering how to communicate with a computer from a keyboard.

Try entering your name - not forgetting to press Return at the end of the line. For instance:

## 1) Aniga Conputing

dutifully, AmigaDOS responds:
Arigs: Unknoun Comand
AmigaDOS does not know the word "Amiga" - it's not it its vocabulary.

However, the AmigaDOS vocabulary by its very nature is infinitely extensible. Even so, basic knowledge of around 20 commands (lexicographers call them verbs) will get you started.

Each command is like a simple English sentence - it has a verb and one or more noun clauses. You don't have to be a polyglot to understand AmigaDOS though, consider this:

## Juap!

This word is a verb meaning to bounce, leap or vault. In itself it constitutes a complete sentence, albeit an abbreviated and demanding one. Add a few more words and you have a more specific sentence, viz:

Junp over the fence.
This is the sort of basic English we learn in school at a very early age. So is AmigaDOS really that complex? In essence, it is like a military English. The words are, initially, strange but the grammar and construction are the same. How about other languages? If the sentence
phrase (do) to open the question something which crept into our colourful language several hundred years ago. The practice of redundancy has never evolved in computer parsers: its too tricky to program and wasteful. In order to understand AmigaDOS you have to think at a simpler level, or at least like a Frenchman. A verb (valid command) always comes first followed optionally by

> It may help you to forget computers for a while...

a list of noun clauses (options or arguments). The AmigaDOS vocabulary is quite large, and since each command can be followed by a multitude of command arguments, the list of possible instruction variants runs into thousands.

Don't be put off by that - it just means you have access to a tremendously powerful system. If the command cannot be


The standard Amiga boot sequence is really quite simple
"Parlez vouz Francais?" is positionally translated into English it looks this:

## Speak you french?

The French would argue this is more logical and simple since the verb comes first (just like "jump" in the previous instance). In polite English we would write this:

## Do you speak French?

We use a redundant prepositional
found in the AmigaDOS dictionaries it complains with the error Unknown Command.

So where are all those commands? You may remember from time to time seeing a message like this: "Please insert volume: Workbench in any drive". Although AmigaDOS is asking for a disk, the noun "volume" is another designation for a book - a dictionary perhaps.

There's no accident in that - the designers chose the analogy deliberately. When you ask AmigaDOS to find a command it
looks it up in its internal dictionar and, if it cannot be found there, searche certain chapters (drawers) on the initial startup disk. You can override this and specify a particular volume if yo wish.

Things can become a little confusing this stage because over the years, tw completely different naming convention have arisen.

The original system talks of books volumes and directories and the later on speaks in terms of an office filing system desktops, drawers, projects, tools and so on. The evolution of GUIs (such a Workbench) is responsible for thi and the AmigaDOS user should be awar of both.

All you need to know at this stage that a drawer is a container for a collection of items, just as a directory is a list of the items held therein: an inventory if you like.

It may help you to forget computers for a moment and consider this. The analogies may seem unclear until you can get hold of something we take for granted.

Nip into your kitchen and have a look through a few drawers: the cutlery drawer is usually a good bet. Inside you will find a collection of knives, forks, spoons, teaspoons - possibly cheese graters and an egg slice: all manner of kitchen detritus.

If you're lucky enough to live in a wellordered household, there's a good chance the eating irons are all stored together in a drawer insert - knives in the knives slot spoons all together and so on. But if the drawer were missing where would everything go?

The organisation of a disk is no different and an intelligent user keeps similar items together. Items are sometimes stored in a sub-group.

Just like the insert in your cutlery drawer, the Amiga can store containers within containers - which computer scientists refer to as a "directory hierarchy" or a "hierarchical filing system".

You can see this in action from the Workbench (go on, one last time). Open your Workbench disk and select Show ... All Files. Now locate and open the drawer marked DEVS. In there you'll see a few items littered about - plus more drawers like Printers and Keymaps.

Now as a parting gesture for this month - those of you who're desperate to jump in at the deep end wearing concrete boots might like to try this from AmigaDOS. Enter this:

## 1PDIR DEVS:

This will give you the same information you just retrieved from Workbench. Note the drawers are marked in the listing (dir). That's because, as I have said, AmigaDOS refers to drawers as directories and (dir) is merely an abbreviation to prevent overcrowding the display with redundant information. Computers are good at that...


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## About the MAC IIx emulation software,

Support for up to 16 colours is provided for non-AGA machines. A4000 owners can use a full 256 colours! Work is in progress to support several third party video boards such as Harlequin, DCTV, Firecracker, IV-24, EGS, Vivid-24,5 OpalVision, Domino, Rainbow II/II etc. Support for AMAX format, MAC hard drives, SyQuest Cartridges AmigaDOS devices (RAD, VDO, DH0 etc.), MAC 800K floppys (requires SYBIL hardware, sold separately), MAC/BM 1.44 Mb floppys and IBM 720 K floppys is provided with easy to use set up menus. Like ALL of the emulation modules that will be released for use with the EMPLANT hardware, the MAC Ilx emulation module MULTITASKS with the Amiga's operating systeml You can simply pull down or flip screens and get back to the Amiga side! ... and the MAC stays running at full speed!

## What about speed and compatibility?

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$v$ery few programs work by sequentially executing a series of instructions from beginning end. Normally decisions have to n made concerning various calculations I user-input and, based on the tsome of those decisions, program atrol has to be able to branch to, treat, the appropriate sections of

Hisoft Basic, like all high-level comtere languages, provides a selection of flow control constructs, and the w/Next statement mentioned last month tincexample.
While/Wend looping is also supported
Is often used for setting up this type simple input/processing loops:

```
[3x'y* I duany value to forct us into the
ans
alif re"
    PRINT pronpt\$
        \(x \$=\) " \(=\) INPUT 15
        do sonething with \(x \$\)
```


## ens

Also provided are Do-Until and DoWhile loops, which allow pieces of code to executed until some expression Tocomes true or false respectively, and a more general type of loop called a tpeat/End.

Such loops have been part and parcel of onventional programming for many years but with modern WIMP interface chines, like the Amiga, a new option tas arrived.

The Amiga's operating system includes a communications system that allows tasks to communicate with each other.

## A logical

HiSoft BASIC HB

Intuition, which provides the Amiga's user interface, uses this to monitor things like window gadgets, menu and mouse interaction.

HiSoft Basic provides links to a whole range of these high-level events and mouse, menu, graphics collisions and timer events can all be generated and detected by your program.

Because the Amiga is a multitasking machine, collecting these events has to be done in a special way. The idea is that rather than looping around waiting for something to happen (during which time the program would be using processor time) your program instead has to execute a special command that puts it to sleep until something of interest happens.

This mechanism is important in multitasking systems because it enables processor time to be used more effectively. With HiSoft Basic the command which suspends program execution is called Sleep and the easiest way to illustrate the use of this instruction is to take a concrete example. The clock program from instalment

# Known your commands 

## Command: IF-THEN-ELSE

Syntax: IF Boolean expression THEN
[statements]
ELSEIF Boolean expression THEN
[statements]
ELSE [statements]
END IF
Purpose: The true/false values of the Boolean expressions are evaluated and the specified code is executed (or not executed) accordingly.

## Command: SELECT... END SELECT

Syntax: SELECT [CASEION] variable
[CASE $=$ ] case list
[EXIT SELECT]
[CASE $=$ ] [ELSEI REMAINDER]
END SELECT
Purpose: Allows the execution of one set of a series of statements to be made conditional on the state of a specified variable.

Command: WHILE...WEND
Syntax:
WHILE condition
[statements]
WEND
Purpose: The statements specified in the loop are executed until the condition becomes false.

Note: HiSoft Basic's Select statements and loops have a range of alternative forms and for additional details you should consult the HiSoft Basic manual).


HiSoft BASIC Compilev/Lditop v1.05 9 HiSoft 19


Loop the loop with ease
three again comes to the rescue because it contained a loop which looked like this:

```
g_exit_flag=FltsE
    WHILE NOT g_exit_flag
    vENo
```

On the face of it this piece of code would execute forever. The reason it doesn't stems from the fact that we had previously executed these timer event statements:

```
ON TIRER (1) GOSUB UpdateHand
TIMER ON
```

These asked HiSoft Basic to deliver timer event messages to the clock program and the result was that once per second the program woke up and executed the routine which updated the clock's second hand.

Within this routine an If-Then test was used to check whether the elapsed time had become equal to some previously identified limit like this:

## If seconds=q_count THEN qexit_flag=TRUE

The result? The variables seconds and g_count are compared and, when they become equal, the statements following the 'Then' keyword are executed.

This forces the variable g_exit_flag to be set to the value TRUE which in turn causes the termination of the While/Wend event handling loop mentioned earlier.

HiSoft Basic allows blocks of commands to be used within these types of constructs but more importantly it also supports a

> Paul Overaa explores the reasons why most programs insist on taking a rather convoluted route from start to finish

complex case testing arrangement based on the use of Select/End statements.

Here's a simple, but runnable, example which illustrates how Select base code could be used to select one of four different code section:

```
PRINT "Give ne a nutber between 1 and 6"
IMPUT *
SELETT CASE I
            CASE 1 : PRINT "you've just
executed the first code section*
                    CASE 2 : PRINT "you've just
executed the second code section"
    CASE 3: PRINT "you've just
executed the third code section"
    CASE 4 : PRINT "you've just
executed the fourth code section*
    CASE ELSE PRINT "This is not a
number betueen I and 4*
END SELECT
```

It's not just Intuition style events that HiSoft Basic can handle. It is possible to open windows, create menus and do graphics as well.

In next month instalment, the last in this introductory series, I'll give you some example code and mention some of the more advanced facilities that HiSoft Basic provides.

## BACK ISSUES

Missed some of the first four parts of Paul Overaa's excellent HiSoft Basic tutorial? Worry not, you can retrieve the situation by ordering the relevant copies from our Back Issues Department.

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EMULATION

When developer Jim Drew first started touting the capabilities of the Emplant board, most Amigans gave his claims about as much credence as they tend to give politicians when they promise to lower taxes. Unlike the typical politician, though, Emplant shows every sign of meeting some of the pledges made for it.

As it stands now, Emplant is a Zorro II card for the Amiga 1500/2000 (with an accelerator board), 3000, and 4000/040 that gives your Amiga the ability to run colour Macintosh software. Developers Utilities Unlimited say that Emplant will work with accelerated A500s with Zorro II adaptors like the Slingshot.
Emplant's selling point at the moment is its ability to run Macintosh software. However, UU tout the board as an all-purpose emulation solution.

They claim that modules will eventually be available which will allow you to run software designed for the IBM PC; Atari ST, TT, Falcon, and 400/800; Commodore VIC 20, 64, 128, and PET
chase Macintosh ROMs from Apple repair centres.
You plug the ROMs into the Emplant and then run a utility that creates a diskbased copy of the ROM chips. You can then remove the chips and store them away for safekeeping. If you do have a Mac, you can use the included ROMinfo utility to create a disk-based copy of your Mac's ROMs to use on the Amiga.

## ONE AT A TIME

Legally, though, only one copy of the ROMs may be in use at a time, so if you take this approach the Mac and Emplant shouldn't be in use simultaneously.
As mentioned before, you need at least a 68020 processor. You'll also need at least 2 Mb of Fast RAM ( 4 Mb if you're running Apple's System 7), and a hard drive is strongly suggested - mandatory for System 7 use. If you think an Amiga's a pain to use with no hard drive, try a Macit's torture.
If you have one of the new Commodore 1.76 Mb floppy drives, you can read and


Adobe Photoshop running on Emplant in black and white, 16 colours, and 256 colours
write high-density Macintosh disks. If you only have the standard 880 k drives, you'll also need to purchase Utilities Unlimited's $£ 34$ Sybil board, which reads real Mac disks fairly reliably, but at the moment doesn't write to them very well.

Emplant will also read disks created by the ReadySoft A-Max emulator in standard Amiga drives, so if you have access to one of those you can use it to transfer disks to an Emplant-readable format. The high-density drive is the best solution,
though, especially if you need to get dat back to a real Macintosh.

Once you have all the necessary part it's time to get up and running. Simpl' plug the Emplant board into a vacas Zorro slot inside your Amiga. If you' got actual Mac ROM chips, plug them and you're ready to go, hardware-wise.

If only the software side were so ea to get up and running. The included 1 page manual (marked "preliminary which is as big an understatement as cal

2001; Sinclair ZX-81 and Spectrum; Sega Genesis (the US version of the Mega Drive); Super Nintendo; GameBoy; and others.
Of course, you should never purchase a product on the basis of promised future capabilities, but if even a few of those emulations come to be it will be a wonderful bonus - and a fantastic way to show off your Amiga! Although the Mac emulation requires at least a 68020 , Drew says some of the other emulations will work with the 68000.

To get started with Emplant, you'll need a set of 256 k operating system ROMs from colour mode. This should look strangely
familiar to Workbench 3.0 users

## uneashed



Why wait for the port? The Mac version of SimLife works fine under Emplant
(nowhere is this documented...).
You'll now see the Mac Emulation Setup screen. Here you tell Emplant how much memory it can use, what kind of video display you want to emulate, where your ROM image file is located, and which Amiga devices should be used for Mac storage. You can allocate some or all of your Fast RAM for Emplant use.

## FAST CRASH

There's another chance for a crash here, though. The Emplant video driver (which can use up to 800k on AGA machines) needs some Fast RAM as well, and this number isn't included in the free memory totals on the memory allocation screen. To be safe, leave at least 1 Mb of Fast RAM free.

The final task in setting up Emplant is allocating hard drive storage. There are two options here. You can either dedicate a specific partition on your Amiga's hard drive, or you can directly connect a SCSI hard drive to Emplant's optional internal

## That box on your desk now holds

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Utilities Unlimited, 1641 McCulloch Blvd, Suite \#25-124, Lake Havusa City, Arizona 86403 USA. Tel: 0101602 680-9004.


SCSI connector. If you use Amiga hard drive partitions, they're limited to 32 Mb in size, although you can have multiple partitions. Drives connected to the SCSI interface can be of any size. For this review I created two 32 Mb partitions on my Amiga $4000^{\prime}$ 's IDE drive.

Once your hard drive is configured, you're ready to install the Mac software. Start the emulation software and your speedy, colourful Amiga screen becomes a black-and-white Mac screen asking for a disk.

Plop the Macintosh hard drive utilities disk that comes with the System software into your floppy drive and the little smiling Mac icon appears. Follow the instructions on the screen to format your Mac hard drive partitions, install the System software, and you're ready to go!

After everything's set up, re-boot your


You have full control over the amount of memory, disk space, and other system resources that Emplant uses

Amiga and start the emulation again. That big metal box on your desk now holds not only an Amiga, but the functional equivalent of a Macintosh IIci as well (or a Mac Quadra if you're lucky enough to have an A4000/040).

## MULTITASKING

But best of all, unlike the earlier A-Max emulator, you can run both Amiga and Mac programs at the same time!

If your Amiga is equipped with the ECS chipset, then you can run Mac software in black and white, four colours, or 16 colours. If you've got an AGA system, then you can run in 256 -colour mode.

The highest-colour mode on your particular Amiga model does slow down quite a bit, since your Amiga's graphics chips are fighting with the Emplant software for access to memory.

Still, 16-colour mode is acceptable on ECS Amigas, and blazingly fast on AGA machines. The latest software update supports the display database on 2.1 and 3.0 Amigas, so you can open in any mode, including $800 \times 600$ and $1,280 \times 512$.

Although screen updates are a bit slower than the equivalent real Mac, actual processing speed is very comparable to the real thing. This

[^2]

The Macs top drawing program Adobe Illustrator


Welcome to Macintosh! Er, welcome to Emplant, that is!
there's no translation step necessary like there is for software-based IBM emulators. An indicator of how well - and how fast - the emulation works is that I was able to run Macintosh games on my Amiga. Falcon MC, a colour Mac version of the classic flight simulator, ran faster on my A4000 running Emplant in 16 -colour mode than on a real Mac Ilci at work.
Velocity's Spectre Supreme, a 3D arcade game similar to Stellar 7, ran at blazing speed under Emplant. And I was even able to play against another player on a real Macintosh using an AppleTalk connection!

## NO TROUBLES

Compatibility is excellent. Every Mac program I tried on Emplant, including the games listed above and heavy-duty applications such as Adobe PhotoShop and Illustrator, worked with no problems.

1 also tried a number of public domain and shareware programs, once again with no troubles. I was even able to use Apple File Exchange to read an MS-DOS disk in my Amiga's DFO: drive.
According to Utilities Unlimited, the only programs they've found that won't work under Emplant are Apple's DiskCopy program (which talks directly to the Mac hardware) and a couple of Microsoft applications, including Word.
Apparently Microsoft break a few of Apple's programming guidelines, and UU are working on patching those problems so even misbehaving programs like Word will work. Stereo sound is available if you're running System 6, but the emulation is silent under System 7 due to changes in

how the OS handles sound. UU plan to address this problem in a future update.
The Emplant board is available equipped with two Macintosh-compatible serial ports, which are necessary if you plan to use a modem or printer with your Mac software, or if you want to connect Emplant to an AppleTalk network.

The ports are hardware-compatible with those on a real Mac, so you can even attach a Mac Midi interface to them for use with music software.
Note that the Mac System software only supports ImageWriter and LaserWriter (PostScript) printers, so if you've got another model you'll have to purchase a separate Mac driver for your printer unlike A-Max, Emplant doesn't provide ImageWriter emulation for other printer models.
As I mentioned, you can run Macintosh and Amiga programs simultaneously. This is the best way to get multitasking on the Mac - actually. Amiga users will find the

## Thinces chance constantly

Emplant is still a product under development. When it first shipped in late 1992, it wasn't ready - the emulation was unstable, and it didn't even support hard drives.

As this review is written the company are up to v2.5, and Emplant finally shows signs of stability and maturity. However, Utilities Unlimited are still hard at work on improving the Macintosh emulation.

Among features planned for future updates are support for the sound digitiser built onto the Emplant board; Amiga-to-Mac file transter; and support for 24 -bit video boards including Retina, Rainbow II and III, DCTV, Resolver, Domino, ImpactVision24, Vivid-24, and Firecracker 24.
UU say that OpalVision, Merlin, and Harlequin support may be provided eventually as well, pending support from the manufacturers.

Updates of the Mac emulation software are available free of charge on various online networks, from UU's BBS, and from Emplant dealers.

## Compatibility is excellent. Every Mac program I tried worked with no problems.

Mac idea of multitasking simultaneously laughable and frustrating.
MultiFinder under System 6 and the Finder under System 7 do allow you to run more than one program, but many applications aren't multitasking-friendly and will block out other programs for long periods of time.
Also, the Mac operating system busywaits, which means that even when Emplant is sitting there doing nothing except displaying the Macintosh interface, it's taking up about 40 per cent of your processor time.

You can adjust Emplant's system priority so that it takes up less time when it's just running in the background.
The emulated Mac's screen is a standard Amiga screen which can be flipped and pulled down. Screenshots for this article were saved with a standard Amiga screen grabber.
Unfortunately, as of this writing UU still haven't implemented any sort of file transfer software, so the two brains in your Amiga can't talk to each other.
To transfer files from the Mac side to the Amiga side I was forced to connect the Amiga's serial port to one of the Emplant

## Multiple personalities

UU plans to emulate a number of oth 16 -bit and 8 -bit platforms using Emplant hardware. Most likely next in ic is the IBM 386/486 emulation.

Although UU had indicated early that they might make an adaptor to pl an Intel processor onto the Empla board, they now believe that they ci achieve 486 speed on the A4000 usi software translation only.

Although many knowledgeably Amigans are sceptical of this claim, thes same folks also said there was no wz you could create a Mac emulator th would multitask with the Amiga.

The game console emulations will be handled by an adaptor that attaches $\frac{1}{2}$ the ROM sockets and will add a cat tridge connector that you can plug game cartridges into. Nintendo and Sega at a bit lawsuit-happy, though, so I'll be surprised if this capability ever makes to market.

All Emplant emulation modules wi multitask with Amiga programs.
serial ports with a null-modem cable use terminal programs on each side move the files.

UU have confirmed that transfer so ware should be available soon that v allow direct copying of files from Ami partitions to Mac partitions.

As mentioned earlier, Emplant is ava able with optional SCSI and serial port On the Emplant disk you'll find a drive called Empser.device which allows you use the Emplant serial ports on the Amig side when the Mac emulation softwas running.

## EXPANSION

Although it wasn't ready as of this writ ing, UU also promise a driver soon that will let you set up Amiga partitions ot devices attached to the Emplant SCSI port

Another promised driver will let you plug four 128 k SRAM chips into the Emplant board, add a battery, and have 512 k of auto-boot, battery backed-up RANT storage. So Emplant is more than an emulstor - it's also a multi-function expansion card for your Amiga.

Is Emplant worth it? If you absolutely need to run professional-quality software such as Quark XPress and Adobe Photoshop that's not available for the Amiga At $£ 255$ for the basic board and about $£ 150$ for a set of 256 k Mac ROMs, you get the capabilities of a $£ 1,700$ Macintosh.

And although the Mac is an odd machine, it's much easier for Amiga usens to make this transition than to the PC Even if UU never deliver on the additional emulation modules, Emplant is a great Mac emulator. Any additional features are extra icing in the cake.


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 EPIC MARKETING you wish to order, and send this page EPIC MARKETING, ist Floor Offices, 31 a Faringdon Rd, Pontal Order. Money order, or simply your Credit Card detuils. ORDERING BY PHONEAIthough the Amiga has always won great praise for its internal sound, the ever increasing popularity of Midi and CD has meant that audio stanAards are much higher than they used to be - especially for those involved in preentation, video and of course music.

With the increasing complexity and sophistication of multimedia in general, Midi support is becoming the norm rather tan the exception, and it's this window in the market that The One Stop Music Shop has been designed to exploit.

As you've probably guessed, TOSMS is pretty unique in the world of Midi modHes - rather than connection via a stan$\Delta$ ard Midi interface, the card slides into a Zorro slot offering stereo RCA outs plus a built-in twin Midi I/O port at the rear.

## Free port

The question is, why bother? With the luge range of modules and keyboards on the market, what's the big advantage in taving an internal version?
Well, for the studio musician the answer is none at all. However for multimedia exploits, freeing the serial port has distinct advantages, as indeed it does for DTV, which often depends on additional kit connected via the serial.

Obviously with the aforesaid port free, edisting serial-based production tools are tell available which can then be combined with TOSMS via ARexx, SMPTE or the excellent multimedia options available

## The Amiga's first

 plug-in synth offers I6-bit Midi sound from inside the machine.Paul Austin auditions...

B\&PPro or Superjam.
If you don't happen to own any of the aforementioned software the hardware can still be used, however this will require connection of the card's second Midi connector to a standard Midi interface, effectively making the Amiga the world's biggest ever PSU.

In short, running TOSMS without Blue Ribbon software means much of the appeal of the unit is sacrificed, primarily due to the occupied serial port and, of course, the lack of any direct links to the
plete sound editor designed specifically for the Proteus SoundEngine at the heart of the TOSMS.

In addition to the essential and excellent editor - which I'll return to later - the utilities include a Loop-Back option allowing direct control of the module via a mother keyboard.

Once active, any channel or patch changes are passed directly to the card allowing the auditioning of sounds without the need for on-line sequencing software. In a blatant attempt to capitalise on the card's multimedia potential, a dedicated One-Stop Midi Player comes as part of the package, allowing any previously recorded song to be loaded-up either singularly or as part of a complete set and then played back at the click of a button. No channel changes, no patch selection, just a simple load and play.
As well as a point-and-click interface, the player also boasts full ARexx support, a feature which is ably demonstrated by a demo provided as part of the software support.
This ARexx link again illustrates the card's multimedia pretentions allowing any ARexx-compatible software to address the card, loading and playing complete works as part of a wider presentation.

An added bonus for the already impressive player is the General Midi standard adopted by the module. In effect this means that any Midi composition designed on a similar GM module will play back faultlessly, as both modules by default share common sounds at any specific patch number. As mentioned earlier, TOSMS comes complete with its own sound editor which in my opinion is one

## The One Stop

## Music Shop

within the new B\&PPro2 which provides links to various 24 -bit boards, Scala, genlocks - the list goes on and on...

Once safely installed, complete with connections to an amplifier and preferably a compatible master keyboard, you're in business - assuming you're the owner of either a version of B\&Pipes,
software in the form of default bands and assorted tools and plug-in accessories.

With the hardware hidden within the bowels of an A1500 or whatever, control obviously has to be software-oriented, and as a consequence the disk accompanying the hardware contains not only assorted utilities for managing the card but a com-
of its biggest attractions providing the most approachable editing environment available for any Midi module.

As you'd expect from Blue Ribbon, the interface is attractive, intuitive and easy to manipulate with the main thrust being aimed at the manipulation of the


A close-up of the main edit window in concert with the twin primary and secondary sound sources


The impressive sound building power of the link
option alongside the LFOs and crossfade control


The subtle side of sound creation as all the elements blend to create the ultimate patch
card's primary and secondary sound sources.

These two elements are the key to the E-MU Proteus SoundEngine allowing the combination of any two of the 213 sampled waveforms stored within the ROMs at the heart of this award-winning synth.

At its most simplistic, sound generation is simply a matter of selecting two complementary sounds which then combine to produce the new tone.

As you can see from the screenshots, each instrument source comes complete with a selection of slider controlled parameters to adjust the tuning, volume, pan position, starting point and the relative delay of the component sound within the overall sound.

## Envelopes

In addition, each of the components has its own amplitude envelope providing complete control over the Attack, hold, decay and release of the chosen sound with any changes being auditioned instantly via a miniature keyboard with chorus and sound reversal close at hand with a simple click on the appropriate button.

Assuming the new sound is roughly to your taste, the fine tuning can begin courtesy of the most ingenious element within the editor.

In order to blend the component instruments within the new sound, adjusting the volume within each instrument window will be more than adequate. However if a more dramatic combination is required, the editor's crossfade option has to be the next port of call.

From here you can define exactly how the two sounds interact, either over time or according to the relative strength of the key depression. For example, at its most simple a crossfade could start with one sound and gradually evolve into the next using the speed and direction of your choice.

Alternatively, when combined with the real-time and velocity modulation options the crossfade can produce a split keyboard, or perhaps a sound that uses one tone below a certain depression strength while switching to the second, and perhaps more dynamic, sound when struck

## Saving your creations

Assuming your new patch or bank of patches are finally complete, the next task is to save it. Obviously the new sound can't be'written to the ROM and if the Amiga happens to be switched off all your hard work will be lost.
As a result, elther individuals or entire banks can be saved to disk and loaded back into the synth as required - temporarily overwriting the defaults.

Obviously for performance use constantly loading the editor and subsequently the necessary voices would be cumbersome at best.

As a consequence yet another utility allows an entire user-defined sound set to be loaded by simply clicking on a start-up icon on the Workbench or alternatively placing the appropriate command in either the WBstartup drawer or startup-sequence.

## more firmly.

Assuming tone generation, mixing and cross fading is complete, we can safely move to the penultimate duet in the editing department, namely the twin LFOs, or Low Frequency Oscillators that dominate the left side of the main edit window.

Five waveforms are available within each LFO, including sawtooth, sine, triangle, square and random with each LFO applying its particular selection to add old favourites such as vibrato, modulation and tremolo to the rapidly evolving sound.

If required, the effects produced by the LFO duet can be combine with other features within the editor such as real-time and key velocity modulation to apply the desired feature over time and according to the strength of key depression.

Although rather complex initially, both forms of modulation and their relation to the LFOs do become clearer with a little experimentation.

With the duet chosen and assorted parameters applied you'd think the new sound would be complete, but there's one last twist in the tail. Courtesy of yet another window hidden in the upper right corner of the main window, even more tinkering awaits.

Once opened, the Link option reveals a series of sliders allowing an additional three existing presets to be appended to the one already being edited.

As a result it's possible to build really big sounds via a multiple preset combination. However, it must be stressed that using multiple presets to build a new
voice does have its drawbacks.
Just like the original Proteus, the Amiga variant - like most sound modules - has a maximum 32-note polyphony which means that no more than 32 notes or voices can be played simultaneously.

As a result, adding up to four presets to a single note means polyphony can suffer quite dramatically, especially if the aforesaid note is played as part of a triad chord thereby instantly burning 12 of the 32 voices on just one chord and leaving precious few for the rest of the composition.

## Keyboard splits

However, this doesn't mean the feature is useless, and in fact if used wisely with perhaps two or three presets and thoughtful application any voice and thereby song can really improve.

In addition, all the component presets can be defined to play between a specific pitch allowing multiple keyboard splits with up to four voices spread over a single patch location.

On the plus side the accompanying software is excellent offering all the utilities and editing options you could ask for.

In addition, the card fits seamlessly into the overall Blue Ribbon range with input and output tools for B\&PPro, an accessory version of the editor for on-line editing, a pre-defined plug-in band for Superjam v1.1 plus total compatibility with Patchmeister - Blue Ribbon's very own librarian software. When you add all of the above to the board's obvious multimedia talents, and probably one of the best
sound-to-noise ratios available from module, the overall combination seem unbeatable.
However TOSMS isn't without faults. Firstly the preset tones can sound little dated in relation to the latest sta dalone modules, primarily because ti ROMs inside are from the very first gene ation of the SoundEngine which is now its third revision.
Aclelition
Although the ROM sounds are a litt
disappointing the situation coul
have been easily resolved by the additio
of the one thing that the module lack
more than anything else - a built-in digita
reverb.
Almost all modern stand-alone mos
ules come with reverb as standard but alu
the TOSMS isn't one of them, resulting
a very dry overall sound.
Even with the problems mentioned
TOSMS remains a viable and portab
solution to the problem of incorporatin
quality sound into multimedia produc
tions. It's pretty unlikely the card wi
find its way into the average studio but
for those Involved in DTV and multime
dia in general it's worth
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## The bottom line

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Mindscape's Miracle keyboard, reviewed some months ago, attracted rave reviews in this most other magazines because it was If to use, extremely well thought out, and ally capable of teaching idiots like me to in the piano.
Snce the original review, I've been pro--ving haltingly through the songs supplied
the package, but recently have failed to - up with practice because many of the $p$ are less than contemporary.
For example, the ultimate lesson which, I ten to add, I'm still some way off, focuses Handel's Water Music. Now, I wouldn't ust to offend our classical-loving readers by atig aspersions on this piece's attraction to modern ear, but it's not exactly toe-tapng stuff, is it?
Never fear! To the rescue of the jaded -rical palate come the Miracle Song liection volumes one and two, each disk ummed with 40 songs from a variety of tists, some of whom are actually still thathing.
The net has been cast fairly wide to make F the numbers, and a quick scan of the disks -ill confirm the presence of songs as diverse = the gut-churningly soppy Hello from Sinel Richie and perhaps the ultimate indicttent of American culture, Rhinestone Cowboy.
Taking the collection as a whole, some of te songs seem to have been included so that me can practice a tune for Christmas to which old aunty Gladys knows the words,


The idiot's guide to modern musical classics


# The second coming UMbGA 

## but sheer diversity makes up for this.

Passing the disks around the office brought a variety of reactions, from pleasant surprise to outright embarrassment (the latter from the Lionel Richie fan), so there seems to be a fair amount on each to suit most tastes. My own favourite inclusions are Hey Jude, In the Midnight Hour and Dream Weaver, and though I can't play any of them yet, I'll be having a damned good try.

Installing the songs is simply a matter of double clicking on the disk's Install icon and following instructions. When installed, the songs

Learn to play
Motown songs
with allen help

# Song files to breath new life into the Miracle keyboard, and Imagine gets a revamp. Stevie Kennedy reports 

will be accessible to Miracle software, but only as additional practice pieces.

Extra songs (of which there are over 200 on the original disks) can be played in the practice room using either left, right, or both hands at a user-defined tempo until a degree of competence is reached, but there is none of the superb tuition associated with Miracle's set lessons.

This to play a song from the new collection it is a prerequisite that the user progresses through the original lessons to the

## Imagine 3.0

The review of Real 3D v2 in this issue is guaranteed to build speculation and expectation for the release of the next version of its closest rival.

Imagine 3.0 is due to see the light of day later in the summer and promises to include enough features to ensure hostilities on the ray tracing front recommence with their old vigour.

Developments in the commercial world which have been reflected in Real 3D v2 include modelling tools such as twist, taper, bend, and shear, all of which will appear in Imagine 3.0.

In addition, the inclusion of brush and texture "tacking" - the process of assigning brushes easily to individual polygons rather than entire objects - should make complex objects much easier to create.

Jointed objects, which have always been rather unwieldy, could become a thing of the past with Imagine 3.0's new bones feature. Working in much the same way as skeletal splines, bones will make human or animal-like figures more natural and give the user much more control over the way they move.

Other major new features include real-time 3D animation preview, AGA support, an enhanced forms editor, a new terrain edi-


The face of Imagine 2.0 will soon be changing for the better
tor for creating landscapes, and (at long last) much improved anti-aliasing.

One area in which impulse have so far remained silent is animation, and there is no way of knowing if Imagine 3.0 will be able to match Real 3D's advanced animation techniques such as the new collision detection feature.

Watch this space for more updates as they happen.
same level as the song.
Any attempt to jump straight into one of the more difficult ones is therefore doomed to failure as the budding pianist runs into unfamiliar chords and techniques he or she has never before had to use. Luckily, those clever Software Toolworks chappies have built a certain degree of idiot-proofness into the collection.

## SKILL LEVELS

Each and every song comes in two flavours, easy and difficult. The easy songs are usually pitched at around level 15 in Miracle terms (less than half way to the final level 40), and the difficult versions at a knuckle-busting level 35 or beyond.

It is therefore possible for the beginner to learn his or her favourite tunes while still on the nursery slopes, then progress to the black runs with the development of either sufficient mastery or enough blind arrogance.

I had a crack at the easy level 15 version of Hey Jude and found it to be playable, though not exactly a version Mr McCartney would have been proud of, so there's hope for the rest of the collection.

Overall, the Song Collection disks are a "must buy" for any Miracle owner and enhance the wider appeal of the whole ensemble to prospective new students of the ivories.

The disks are available from Mindscape ( 0444246333 ) and cost $£ 49.95$ each, a price which is pretty steep for a single floppy, but which presumably takes into account the fact that the 40 original titles all have owners and all of them take a small cut.

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## Blitzing



All the usual types of compiler options are provided
the litz Basic has been around for quite a while, during which time it has acquired the reputation of being one of the most interesting Basics available.
The package has never really been aggressively marketed in the UK although elsewhere in the Amiga world there are a great many satisfied Blitz users. With the demise of the original AmigaBasic, and the resultant gap in the Basic interpreter/ compiler market, a lot of alternative Basics have come to the fore, including HiSoft and GFA Basics.
Of late, however, it has been Amos that has stolen most of the limelight, but there is little doubt that the latest update of Blitz Basic, called Blitz Basic 2 - or Blitz 2 for short - will also make its mark on the Amiga Basic scene.

Blitz Basic 2, like its predecessor, can produce incredibly fast code - easily fast enough for most commercial games writers. As with most Basics it offers its own set of Amiga-specific commands although, having said that, quite a few of its "main core" Basic commands follow, with one or two quite surprising exceptions, the usual

# com 

de facto standard set by Microsoft Basic.
When you get to the more esoteric goodies, Blitz 2 has its own way of doing things but of course in this respect it is no different from any of the alternative Basic packages.
Talking of packages, the new Blitz 2 offering consists of three disks - Program,

## Paul Overaa puts the latest version of Acid Software's Blitz Basic 2 compiler under the spotlight. The results are quite literally stunning

 Library and Examples - plus an assortment of manuals, Blitz magazines and so on.
## EXTRA GAMES

The review package also provided a couple of other disks containing some Blitz 2 public domain games, but to be honest it wasn't made clear whether these are now part of the Blitz 2 package or were just thrown in as extras on this occasion.

The main documentation is spilt into

## Grand graphics

On the graphics front, Blitz 2 scores very highly indeed. The language provides the programmer with a whole range of easy-to-use high-level objects including Intuition eventoriented mouse, menu, gadget, window, and screen support.

Also on offer are objects which concem themselves with sprites, bitmaps, palettes, shapes, Intuifonts and Blitzfonts (special $8 \times 8$ fonts for fast Bitmap text).

Incidentally, Blitz 2 also allows the use of both IFF samples and Soundtracker/Noisetracker song modules. One of the nice things about the overall Blitz 2 object approach is that all objects tend to be handled in a similarly consistent fashion this help to make programs easier to both write and read.
two parts, namely an A4-sized reference manual, and an A5-sized user guide. The reference manual is clearly written, clearly laid out, and very adequate.

One of the things that I particularly liked is that commands and functions are grouped according to use, rather than simply being thrown together as a straight alphabetical keyword/commands listing.

This makes the manual easy to use and it's a doddle for example to locate all the string functions, or all of the program flow control statements, offered by the language. There are plenty of examples of use (one for almost every command) although the main tutorial-style discussions are reserved for the user guide which does an equally reasonable job at providing an overview and gentle introduction to the language.

To enter and compile Basic programs you need a text editor. Blitz 2 comes with an editor called Ted which acts as both an interface to the Blitz 2 compiler and as a standalone text editor.

Ted is a fast, reliable editor which has
all of the usual types of project and block loading and saving options. There's mouse controlled cut and paste and search/replace facilities which include case sensitive/insensitive search toggles.

As with most such editors, Ted is fairly average looking display-wise but it's pretty obvious that some thought has gone into this offering and in use some nice touches can be found.

## HIGHLIGHTS

You can, for instance, reset the current directory from Blitz 2's file requester - this is useful when additional files need to be loaded as a program is run.

Another feature, especially useful for structured programmers, is the Amiga-A combination which automatically highlights the current line and any lines above or below it which are indented by the same number of spaces.

The compiler itself is called directly from the editor menu and provides all the usual types of user-definable options for

## Building structures

Anyone who has ever done any C programming on the Amiga knows how important the C structure is. Structures are complex variables which allow the programmer to bundle together sets of use-related variables and treat them as a single unit.

One of the most interesting additions to Blitz 2 is that the compiler now supports NewType variables which to all intents and purposes are Blitz 2-style $C$ structure definitions. Supposing, for example, that you wanted to define a unit for storing details of appointments held in a computerised diary. With Blitz 2 you could do it like this:

```
MEYTYPE. appointrent
    tise.q.
    day,b
    tonth.b
    year, b
    detailss
End MENTYPE
```

Once this type of unit has been defined variables can be assigned to it by using the NewType name as a suffix., eg example.appointment, and from this point on individual members of the unit can be manipulated using the backslash (I) character:
examplelyear=9\}
Print examplelyear
NewTypes are extremely useful and as well as being able to include other NewTypes within a NewType definition it is also possible to include arrays.

Some more good news for the serious programmer is that direct support for linked list operations has now been implemented. Lists are dimensioned in much the same way as arrays but can be manipulated with special commands and functions such as ResetList, Addltem(), AddLast(). Nexittem() and so on.

If, for example you wished to create a list of 30 of the appointment structures just illustrated you could do it like this:

## Dis tist Jume.appointrent(30)

and from that point on you could use any or all of Blitz 2's List manipulation functions on that NewType variable set! The Blitz example disk has some extremely good illustrations of how lists of graphic object NewTypes can be created and manipulated.

Another facility that Blitz 2 supports, and which though not usually found will be beloved by users with some $C$ experience, is the use of " pointer operator. More C style magic is provided with support for manifest constants, conditional compilation, Blitz 2 macro definitions and the use of Resident files that contain pre-compiled lists of NewTypes, macros and constants.

If this is not enough the manual mentions that facilities that allow programmers to link Blitz 2 programs to C code modules will be available in the near future.


Ted the editor - simple but effective
$>$
including debugging info, minimising code size, creating icons for executables and so on.

In addition to this, the compiler supports an array of control directives that when placed within the programs themselves control such things as mode selection, file inclusion and error message generation.

Like most Basic compilers Blitz 2 can report two types of errors - compile time errors which cause the compiler to stop and display a diagnostic message on the screen, and run time errors.
To help with detection of the latter, Blitz 2 provides a run-time debugger that, if enabled, will be activated automatically when, and if, such errors occur.

It's possible to trace program execution, switch between debugging and program displays, and perform things like expression evaluation. Trace options include both backwards and forward single stepping and of course the ability to step backwards through the code that was executed prior to a break gives the programmer much better than average chances of seeing why the error occurred in the first place.

## ASSEMBLER

Blitz 2 also provides other tools including the Intuitools, shape maker, and map edit utilities, and... an assembler.

Like all Basics, Blitz 2 has areas where it has its own flavour and one of these is in the way variable types are declared. Blitz 2 supports six different types of primitive variables - five number types plus the usual string variables.

Numeric variables can be byte ( 8 -bit), word ( 16 -bit), long word ( 32 -bit), or floating point and there's also a q (quick) number type which offers a two-byte fixed point format for fast manipulation of decimal numbers.

Where Blitz 2 differs from other Basics is in its type notation - number variables have to be given letter-based suffixes so whereas in, say, HiSoft Basic you'd might write a 16 -bit integer called loop_count as loop_count \% you'd need to use loop_count.w with Blitz2.

Although it is admittedly easy enough to convert from one form to the other it is,

## C...blisteringly fast and offers

## some stunning

 Amiga-orientated graphicsto minimise potential portability problems, probably a good idea to instead use Blitz2's DefType command. This allows you to predeclare variable types and so avoid the use of explicit letter-based suffixes.

Surprisingly Blitz Basic does not recognise REM as a remark indicator - it uses the semicolon instead (a common 68000 assembler convention). To my mind this is plain stupidly in the world of Basic but to be honest it doesn't really cause any serious problems once you are aware of the fact.

Even when physically converting files written using other Basics it is only a matter of globally replacing all REMs with semicolons!
One things that is likely to attract many of the more advanced Amiga programmers to Blitz 2 is the fact that an in-line 68000 assembler is provided.

OK, so 68k coding isn't everybody's cup of tea, but it's nice to know that these facilities are there if, or when, you need them. The good news for most coders is that even without dropping into 68 k code, Blitz Basic 2, like the original Blitz Basic, is blisteringly fast and it offers some stunning Amiga-oriented graphics facilities.

These include super-smooth scrolling and dual-playfield tricks available using Blitz Basic's Blitz Mode command, which allows programs to suspend normal multitasking and take over the whole machine.

While many of the Blitz 2 display tricks can be achieved by anyone (including beginners) there is no shortage of provision for the more advanced user and if you fancy a Basic whose options include commands for things like copper list manipulation and so on, then you need look no further than Blitz2.

I've certainly been very impressed with the enhancements provided by Blitz Basic

2, especially with the C-style langur extensions, but when I first encounters the Blitz way of doing certain operatios my first reaction was "some of these thin may cause problems for the new Bas coder".

Within hours of using the package I changed my mind and now suspect that because the overall size of the languagr (even with its extensions) is smaller tha alternative offerings, Blitz Basic 2 is goito be less difficult to get to grips with the many other Basics.

Certainly even novice programmers arr going to be able to produce a lot of cleve effects very easily indeed. Needless to stir the more experienced coders will find that Blitz 2 offers stunning possibilities.

It deserves to do well., but obvioush acquiring this success is likely to be some thing of an uphill struggle given that Amos HiSoft Basic and GFA Basic have already captured most of the potential market.
Whether current Basic programmen will'swap to Blitz 2 remains to be seen, but it may well draw its support from other areas. There are, for instance, an awful lot of serious C/assembler coders who currently tend to be unimpressed with Basic. If you fall into this category my advice is to have a look at Blitz 2 because I suspect that it may change your mind.

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## The bottom line

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## Old hard drive

My son has an Amiga 500 Plus and has just recently acquired a hard drive with extra memory and power supply from a defunct A500.

Problem is, the person who gave my son the drive did not give instructions on how to install it and unfortunately has since emigrated to Singapore.

I therefore ask your advice and, if possible, full instructions for installation. Also, as it is a "used but good" hard drive, how does my son de-install it in future if it fails?

Are there any manuals available dealing with hard drives, both the hardware and software side, which cover topics such as creating directories, copying files, and so on?

I have heard that some games will not run from a hard drive. Please explain why and whether there is any indication when buying the game that they will not run.

Lastly, do you know of any reputable companies supplying shareware or PD software specifically for the A500 Plus or even any bulletin boards specifically for the Amiga? I have access to a PC-based modem at work. Are there any utilities to convert IBM games to run on the Amiga?

D Lewis, Caerphilly

AHmm ... a nervous first time Amiga hard drive owner if ever I've seen one. Luckily, as the hard drive has already been used on an Amiga, you might have very little work to do.

Assuming the drive has not been damaged, plug it in, turn on (first the drive power, then the Amiga power) and wait until boot-up. With luck, the hard drive will kick in and you won't have to bother with formatting or any tiresome partitioning process.

If the drive fails to boot, check to see if it has a game switch and, if so, that it is in the boot position. If this pans out, you may have to locate the drive's manufacturers for software with which to format it.

As you failed to mention the drive make or model, I can't help you on this score, so we'll assume the drive works.

Manuals do exist for hard drives in general, but they are more often than not a bit technical and concentrate on the hardware side almost exclusively. A good general AmigaDOS guide from Bruce Smith Books (0923 894355) would be of far more use.

Finally, games which require a full 1 Mb RAM in which to run will often fail to run from hard drive because the act of booting a Workbench uses as much as 200k.

If the hard drive comes with its own RAM expansion, this should not be a problem, but the insistence of Amiga software companies on disk protection which makes it impossible to install a game to hard drive will cause you much more grief. Good luck!


> Monitors, broken disk drives and poorly power supplies tax our experts in the definitive Amiga technical clinic

## Out of print



I have an Amiga A500 Plus and a Commodore MPS 1270 printer. The problem is, I can't get the printer to work. I've tried several books but with no success. Please give me a step-by-step guide on what to do. I'm desperate.

## David King, Marham

AEr ... at the risk of sounding facetious, have you read the manual which comes with the printer? You should follow the standard troubleshooter steps such as making sure the printer is plugged in, switched on, and a suitable cable is connecting it to the Amiga.

Next, make sure that the printer is on-line by checking the front panel for the indicator light which is present on every printer. It might be labelled "ready", but as long as it is active, your printer is ready to receive data. If all this is taken care of and the printer has paper, boot from Workbench, open a Shell, and type:

## COPY S:STARTUP-SEQUENCE TO PRT:

As long as you have some sort of printer driver selected in your prefs settings (generic will do to begin with), the printer should now reel off your startup-sequence. If it doesn't, go back to the beginning and check all the above steps, and if your printer is still not working take it back for a refund!

## CDTV queries



I have an A500 with 512 k fast RAM and 512 k chip RAM and I am considering buying the A570 CD-ROM drive now that the price has gone down to $£ 150$. However, I have some
questions before I buy:

1. How do I boot up CDTV software? Does the Amiga boot using a CDTV-style Kickstart?
2. When using Workbench, does the A570 count as a device like an external floppy or a hard drive?
3. Does the A570 have a SCSI through port so I can fit a hard drive or extra memory?
4. How will I be able to hook up my Amiga to a hi-fi so that I can play CDs
using my amp and speakers?
Finally, one of my main reasons for getting the A570 is the fact that I buy a lot of PD, so the CDPD collections could be of great use to me. However, I thought the idea of PD was that people could only charge for the disc copying costs. Surely this is less than $£ 19.99$ ?

Jim McKenzie, Old Stevenage

AIn answer to your questions, I should start by pointing out that use of the $A 570$ requires 1 Mb chip RAM and Kickstart 2.04, so please bear in mind that you'll have to upgrade your machine before buying the drive.

1. With the $A 570$ in place, the Amiga will boot either from the internal floppy, if it contains a disk, or from the $C D$.
2. Yes, the A570 appears as CD0:, and if a non-protected disc is being used its contents can be accessed using the usual AmigaDOS commands.
3. The A570 has no SCSI or DMA through port, so you'll have to make sure that you can buy a hard drive or RAM expansion with a through port, then connect the A570 on the end. You'll have a very long A500, but it will be a rather powerful one.
4. To enable the playing of CD music through external speakers, the A570 has stereo audio out phono sockets in the rear casing, so it is a simple matter of hooking the drive up to your amplifier's line in to play audio CDs as normal.

Your comments on the price of PD CD discs should really be redirected to Almathera Systems, producers of the CDPD collection. I'm sure they'll be happy to answer any queries you have about buying 600 PD disks for $£ 20$.
I have an A500 Plus and an Amstrad NCto0 Notepad which I bought after
reading the review in your Amiga Market Shop Window section. The only
drawback in what is otherwise a fine machine is the non-backlit screen.
I have Protext v4.3 from the January CoverDisk, so I decided to invest in the
Lapcat software and cable and now the Amiga can talk to the Notepad and vice versa.
However, on Ioading Lapcat my system tells me "Error opening library
Diskfont.library v37". Strangely enough, if you click on Abort, the program carries
on and runs perfectly well.
I rang Arnor at Peterborough where I purchased the Lapcat software and they told
me that the program doesn't call for this library. He said it must be a problem with
the Workbench.
What does my Amiga want? This is most annoying every time you load up
Lapcat, which is not a self-booting disk and must be loaded from Workbench. What
can I do?
David Langley, Cambridge
You can check the Libs drawer on your Workbench disk for a start. It
should contain a copy of the Diskfont.Library and if it doesn't, you should
copy it to the drawer immediately. Other than this, I can't figure out what
might be wrong.
The copy of Lapcat we use in the office has no problems on our Workbench 2.04
and 3.0 machines, so there is no bug in the software. In the last analysis, the prob-
lem is merely annoying and not fatal, so you can at least live with it if you need to.

## Screen trouble

Q
I have recently upgraded to an A4000/030 (can I be your friend? - Ed) and I am experiencing some compatibility problems with serious programs and hardware that I had expected to work correctly. Can you help?
I cannot get Amos v1.3 to run in DBLPAL mode, even with mode promotion on. Is there an easy solution and does Amos Professional have the same problem?

I am also experiencing problems with my 16 in NEC 4D multisync monitor as I am not able to display a full width Workbench screen, even when using overscan.

This monitor's horizontal sync is from 30 kHz to 57 kHz and displays a very stable picture when VGA only is activated, but almost an inch of viewing width on both sides of the Workbench backdrop is inaccessible.

The monitor worked fine with my ICD flicker fixed A500 and utilised all the available viewing area.

Your recent articles and reviews on monitors make no mention of such problems with VGA or multisyncs. Can you offer any advice? Also, your A1200 and A4000 articles mention that you need multisync monitors which horizontally sync from 15 kHz to 75 kHz to display all the

new resolutions, but with the exception of Commodore's 1960 monitor, only 30 kHz minimum sync rate VGA monitors have been reviewed.

Can you please review a greater range of multisync monitors, especially ones that can display lower resolutions including Super72 mode?

P Sadler, Redditch

AAmos 1.3 does not work under Workbench and instead uses its own screen, so it does not work well with mode promotion. There's nothing I know of which can be done about this apart from buying Amos Professional, which functions

## Brother bother

QI am using an old Brother HR-40 with my A500 Plus and have found it to be very reliable. However, I am thinking of replacing it in the near future and I have been looking at the new Brother HJ -100i.
Will I be able to use the $\mathrm{HJ}-100 \mathrm{i}$ with my Amiga? Resident emulations are IBM ProPrinter X24e and Epson LQ550, and the interface is Centronics parallel, which I assume is the same as my HR-40. It's only a mono printer, but being an inkjet I imagine I should be able to use fonts which I can't at the moment.

I have seen the HJ-100i advertised at $£ 299$ including the connection lead and VAT, which seems a very reasonable price for an inkjet and would be ideal for my needs (letters, CVs, and so on). I have never seen it reviewed in your magazine, so information about this printer is scarce.

I would be grateful for any advice that points me in the right direction, as I have heard of many people buying printers then having trouble with them.

Phillip Cole, Coventry

AAs the printer you mention emulates the Epson LQ550, it should work perfectly well with the EpsonQ printer driver supplied with your A500 Plus Workbench 2.04 disks. The parallel printer lead you presently use will also work fine with the new printer.

As for using more fonts, only a PostScript laser printer actually gives access to more fonts, but any that you have will print better on a decent quality inkjet. I don't know much about the Brother HJ -100i, so check before you buy what its maximum print resolution is.

This shouldn't be less than about 300 dpi if the printer is to justify its price tag, and you might like to compare it to the Star SJ-10 reviewed in this month's Shop Window section.

The SJ-48, a Canon BJ-10 rebadge, will print at 360dpi, albeit slowly, and costs only £215. Alternatively, try taking a look at the Hewlett Packard 550, a much quicker printer with sheet feeder as standard.

It retails for about $£ 330$, so isn't much more than the Brother and takes quite a bit of beating in the value for money stakes.
better under Workbench 3.0. Phone Europress Software on 0625859333 for more details.

Your monitor won't use the entire viewing area because the AGA chips don't output a standard VGA signal, unlike the flicker fixer you mention which does this and a lot more besides. The inch of lost screen area cannot be regained on most monitors, though you may be able to reduce it by experimenting with different monitor types.

Finally, the reason we mentioned only the 1960 in relation to the complete range of AGA screen modes is because it is the only monitor which will carry out this feat.

A new range of Commodore AGA monitors with stereo sound are on the way (look out for a review soon!) and other manufacturers look set to release better matching monitors in the near future, so keep your eyes peeled for news.

## Which printer?

बI own an A500 with 1Mb RAM and I was thinking seriously about converting to the new Amiga 1200. However, I have only had my A500 for about seven months and my parents aren't too keen on the idea. Could you outline the advantages so I can use them as arguments?

I am now studying for my A-levels and need to use a wordprocessor for reports and essays. Which printer can you recommend for about $£ 230$ ? The same goes for monitors. Can you recommend one?

Will the PD program Kick1.3 work with the A1200 to make it more compatible with older games and so on?

David Bromley, Grimsby

AI wouldn't dream aiding an abetting an avaricious teenager in the pursuit of shallow mate rialistic ends!

As for your printer, the Canon BI10sx or Star LC24-20 Mk2 are the obvious choices. A bit more cash would secure you a faster bubblejet or a few extras such as colour or a sheet feeder, but the basic printers should be good enough for essays and reports. Try First Computer Centre on 0532319444.

For the price range you specify, the only real choices are the 1084 or the Philips CM8833. Indie Direct are doing a good deal on the 1084 at the moment, so check out their ad.

## Video titler

QI have bought an A600 to use for video titling. At the momert I use a VEC 1070 video pro cessor (an excellent unit) and a Son Video Sketch Titler for titling, though the latter is not powerful enough.

I will have about $£ 200$ to spend on a genlock, but will the genlock work with mi video processor, and what type or make do you recommend?

With a good freeze frame on my videc recorder, would the genlock act as I frame grabber?

Lastly, I want to send messages or even digitised pictures across the country to my family. What type of modem and message cruncher/de-cruncher software would you recommend for $£ 120$ ?

Brian Gibson, Blackpoo

AAny Amiga genlock will work perfectly with your video processor as long as you ensure you have the same sort of signals. In other words, make sure that if your video processor accepts composite PAL signals that you buy a composite PAL genlock rather than an S-VHS unit.

Most of the cheaper genlocks are composite, so this should present no problem unless you have an S-VHS processor, in which case you'll need a much more expensive genlock.

Try the Rocgen unit available from a number of our advertisers. It is reliable and has a good quality output and shouldn't cost more than about $£ 140$. One other good entry level unit with good output is the Rendale 8802, so shop around for a good price.

In common with most genlocks, neither unit will act as a frame grabber, and for this you'll need some extra hardware. The Vidi Amiga 12 offer on our May issue CoverDisk sounds ideal for you, as it offers a high quality colour digitiser for only £69. If you didn't catch that issue, buy it for the bargain price of only $£ 3.10$ courtesy of our back issue service.

A cheaper Supra modem should just about squeeze into your budget for such a device, though the money you save on the genlock might go towards a faster model which would be cheaper in the long run.

Software for comms use is mostly excellent and most shareware. You might give NComm and JR-Comm a look, and you'd be mad not to go for PowerPacker 4.0 from Europress Direct.

You got problems too? Then drop a line to Amiga Computing Advice Service, Europa House, Adlington Park Macclesfield SK10 4NP and we'll move heaven and earth to help in these columns. But sorry, we cannot reply personally, so save those SAEs.

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PD and SHAREVVARE

After the post-Christmas lull, the quality seems to be returning to the public secfor - obviously a proportion of whizz-kid Amiga-for-Christmas programmers are getting the grip of their Amos's and Seucks and beginning to churn out some original stuff.

Whatever the reason, this month sees a truly absorbing golf game which could well have been worthy of commercial release only a short while back; a bizarre and fresh arcade game in the strangely titted Bomb Jacky; and possibly the most polished music disks I've ever had the aural pleasure of reviewing.

Before starting, my apologies to everyone who's sent me stuff which I haven't had room to review. I've been inundated with disks of late, so a lot of worthy programs have, unfortunately, had to fall by the wayside.

## Text Engine

## 17 Bit, 2465

If you're short of money but decide you need a wordprocessor for your Amiga, you may wish to look and see what's available for free in the public domain.

Until recently, PD wordprocessors have lacked too many of the features of their commercial rivals to warrant serious consideration by all but the most light users, but the arrival of disks like Text Engine is heralding an end to all of that.

Text Engine is a professional-looking, fast and solid program, which has enough of the features you'd find on a commercial variant to make it genuinely useful to the average user.

On loading, it immediately resembles both in colour and in the rules across the top and down the side - Wordworth or Kindwords 3, and has a palette adjuster allowing you to alter the colours of pen, paper and guidelines to suit your preferences. Included in its impressive list of

## Phil Morse sifts the very best from a large postbag of quality gear to bring

 you the latest top quality free and shareware games, utilities, animations and music


Fruit Salad or rhubarb and custord? Either way, a rather strange platformer
can-dos are a 36,000 -word dictionary, full support for Ascii loading and saving (so files can be used from other wordprocessors, or you can take Text Engine-created disks and use them elsewhere), the ability to handle interlace if you're lucky enough to have a compatible monitor, and a comprehensive set of editing options.

Add to this macro support, a large selection of font styles (although only one font) and the ability to print to all Epson-compatible printers, and it becomes clear that Text Engine is nothing less than a perfectly acceptable basic wordprocessor for the price of a meagre shareware fee.

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## EasyCalc

Roberta Smith, 2507
Spreadsheets. Even the word is enough to induce involuntary falling of the eyelids. Plain, boring and impossible to use are just some of the criticisms thrown at the


Of our brace of animated spectacles this month, possibly the lesser is Spar Trek 2 from NBS (P100/101). That's not to say it isn't worth a look, though - far from it.

During the customary age it takes to load - a fact about which it warns you sardonically as the tedious process begins - we're left to wait with the faint hope of something amusing at the end of it all.
And indeed, although it is all a bit awkward, the plot getting cluttered by the


The USS Enterprise, about to embark on a dangerous mission...
ple. Claiming to be easy to use, by containing all of the basics without superfluous extras (the very extras you pay heavily for when investing in a commercial spreadsheet), EasyCalc's author is anything but modest about the capabilities of his program.
Luckily, it lives up to all of the claims. From the word go this is very professionally presented - you know, the icons look polished, it does indeed race along at a thare's pace as the author claims, and overall has all the hallmarks of a designed-from-the-ground-up package.

So should you be looking for a workhorse spreadsheet, this one justifies the rather steep shareware registration fee of $£ 15$ - there's even an order form on the disk!

## Fruit Salad

## 17 Bit, 2499

In this unlikely platformer, your friends have turned into fruit and vegetables, and what's more, they've got it into them that your destruction is of prime importance.
You collect rather unoriginal "gems" from each screen, which allow you to leave by a predefined exit. When you collect the last gem, the background colours scroll rapidly, to great psychedelic effect. It's a case of get out quick before your monitor explodes, and I only exaggerate a little.

Indeed its looks - both in-game and the overall presentation - are its strong point, along with some amusing sound samples to pepper things up. The actual gameplay itself is rather average, which is not to say that it's unplayable, just that the characters


18th Hole is a pretty and fun-to-play golf game
move around rather simply and at a slowish pace.

Still, the use of the Fire button instead of Joystick Up to jump is a first for me, and it's worth playing just for those backgrounds!

## 18th Hole

## 17 Bit, 2994A/B

A graphically excellent golf game, 18 th Hole combines a complete course of varied holes with lots of engaging control over your shots, guaranteed to keep you playing right until the very end - especially if you utilise the two-player option and get some healthy human competitiveness in there.

You start by using a simple method to select direction, power and swing, and then watch as you hit the ball - which gets


## Don't Jump! is a wickedly humorous short animation

clumsy screenplay at times, it is also rather amusing, and is ultimately saved by the judicious use of original Star Trek music and samples.

The bit where Captain Kirk is moving his mouth on the screen in time to real audio footage of his voice is particularly impressive.

Indeed, with both William Shatner and Leonard Nimoy getting a shout in, a seemingly irrelevant green kangaroo-style thing and the emergence of a shock guest from Star Trek: The New Generation towards the end, this is a larf if nothing else.

More accomplished, though, is Marco's Box of Fun from 17 Bit (2497). A collection of four animations on one disk, this collection - penned by one Marco Vigelius - opens on a short relying on the old Fat Freddy's Cat gag of animal
bigger on your plan-view of the course as it rises - to what is hopefully somewhere nearer to the green.
When you reach the green you get a special, full-screen close-up of what's going on, as you attempt to glide the ball home and you onto the next hole.

The gameplay itself is actually quite unrealistic - how could a golf simulator on a computer be anything but? - and this one feels more like an obstacle course than a golf course.

This is because you cannot hit over the trees, of which there are quite a few more than you'd expect to find. What's more, they're invariably positioned between where you tee off and the green, meaning it's like going through a maze sometimes.

Nevertheless, the graphics, rules (you get an authentic score card), and neat touches lend the mood if not the authentic gameplay of the real thing. A great game, and well recommended for armchair golfers not impressed by the cost of commercial alternatives. be anything but Man's Best Friend when they want to . all about. FORTHE ATARI ST Oooh, the back-stabbing cyniclsm of It all!

## PD, please!

I'm always on the look-out for top quality PD, whether it be utilities, games, applications, animations or music (and music doesn't have to be ravel).

So if you're the author of something so off-beat or original that a languid commercial giant wouldn't touch it with a barge pole, then get it in the post with a great deal of haste.

Or if you run a library, send me your star disks for possible free publicity in these very pages.

Please ensure that all submissions come clearly marked with the title and type of program, the address it can be obtained from and any other information you feel to be relevant.

A ReadMe on disk is always useful, as is a hard copy list detailing exactly what is enclosed in your package. All of these measures will dramatically increase the chances of your product making it into print.

## Menu Launcher

## 17 Bit, 2486

A tool designed to start any application, game or whatever you've got installed on your hard drive, using a very simple method involving simply clicking on a button.

Menu Launcher shrinks on your Workbench to just a window with a title bar, and can be expanded to display up to 15 programs for choice of loading. It comes complete with a comprehensive on-disk manual explaining how to set up and use the utility. I envisage a use for this in, say, a
being cruel to owner. This time it's a dog, showing that our canine chums can
What all four of these animations lack in graphical complexity they make up for in pleasing animation and a wickedly sick sense of humour. Oh, and they load quickly. Petty Amiga owners will most certainly extract a wry giggle from the anim entitled Atari ST Game - I'Il leave it to you to find out what this one's

## HERE is A game That

is Especially written

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HigeL.us 'sz

movements, would ever consider releasing.

The excellent opening sequence involves the credits being written in 3D hand grenades (you gotta see it, really) combined with some punchy, drum ' $n$ ' bass rave-style music all very professional.

The whole game feels very friendly and playable, from the bouncy, up-to-date tunes to the special effects to the

Strange gameplay indeed in Accursed Toys

## $>$

small business where the computer is used exclusively for a number of pre-defined tasks, such as a wordprocessor, spreadsheet or calendar, or for setting up education games for a child to use unaccompanied, for instance - although in the latter case, it could do with being a little more colourful and welcoming to anxious young fingers.

Still, if you like it, it only costs a bargain $\pm 5$ shareware registration, and for this you get a fully working version including the ability to load and save your preferences quite an important addition, when you come to think about it.

## Bomb Jacky

## 17 Bit, 2476

Apart from the wicked title, this is an awesome example of what the public domain occasionally throws up - a game so fresh and off-beat that no commercial house, with their highly polished sprites and
clever, colourful graphics.
It's basically a fast platformer, with a young edge devoid of the yawning, predictable nature of many a slick release. This originality, combined with well-programmed gameplay, makes Bomb Jacky as addictive as it is original. Respect!

## Assassins games 58

## NBS, AS58

Three games are collected on this compilation by the Assassins bunch-with the usual flash selection menu.

The first of these, a Seuck-effort called Super Raid IV, exhibits the usual jumpy' n '-clunky feel of Seuck games, but is in fact a half-decent copy of Thunderblade, complete with an Assassin's-added unlimited lives feature at the beginning.

The second of the three failed to load on the basic A600 I was reviewing it on, but the third - apparently called Accursed Toys and opening on a rather sick picture involving a teddy bear and a knife -
is another Seuck effort, and decidedly weird to boot (no pun intended).

Apparently you're meant to "help Tilka and Hyssop battle to make the grade", whatever that means. Anyway, it involves your scrolling vertically in a jumpy, clunky kind of way, shooting at ground-based plantlike creations which emit balls of botanical nastiness in your general direction.

I can't work out exactly what the majority of the sprites are meant to be, but they're all original, which is nice to see considering the decidedly unoriginal constraints imposed on such games by the limitations of the construction kit.

Oh , and according to the game itself, it is actually called Realm of Maiyessae. Weird...

- Assassins game disk 1 to 64 are currently available from the same distributor.


## Sanity

## Amiganuts/Battleaxe PD

Hmmm. This one's about a character who - if the opening sequence is anything to go by - loses his mind, quite literally.
Not surprisingly, he wants it back, leading to a highly trippy platformer full of cycling colours and extremely fast gameplay, all set to manic tribal drums and music with definite hardcore


Out of their minds or off their trees? The jury's out on the programmers of Sanity...
leanings, including the classic "here we gt again!" sample. Oh, and as far as I can recall, I've never controlled a bubbl before. Sanity? I have my doubts...

## Where to get 'em

Amiganuts, 12 Hinkler Road, Southampton SO2 6FT

Battleaxe PD, 125 Kingswood, Thorpe Marriot, Norwich NR8 6UW

Andrew McKeniry, 9 Leyton Cross Road, Dartford DA2 7AP

NBS, 1 Chain Lane, Newport, Isle of Wight, Hampshire

Roberta Smith PD, 190 Falloden Way, Hampstead Garden Suburb, London NW11 6JE

17 Bit, 1st Floor Offices, 2/8 Market Street, Wakefield WF1 1DH


Recreate the excitement of a nightclub at Iam with No Umits!
It's all dance stuff this month - if you want to send me your sequenced Schubert l'd be more than grateful for the change, but of the disks that I could actually get to load, the only ones worth reviewing had a decidedly, erm, foottapping feel to them.

No Limits, by John Crawford, takes No Limits by 2 Unlimited and Felix's neo-hiNRG classic Don't You Want Me , and submits them to the classic Amiga cut ' n ' paste treatment.

To the visual accompaniment of a crudely drawn but stroboscopically flashing dancefloor - complete with lights and even a glitter ball - the Amiga crunches its way through some crudely cut-up chunks of music, whose lack

of subtlety distracts from the actually quite effective onscreen colour onslaught. A "no" from the jury, I'm afraid.

Far better musically, and indeed possibly the best sequenced Amiga dance music l've ever had the pleasure of reviewing, are entitled Dance Classics 1 and 2, which come from Andrew McEniry.

Six classic dance choons are here spread across two disks, from the fittingly chopped up Liberation (a song which itself borrows nearly everything from other records) to Italy's best Capella and the less immediate but undeni-
ably hypnotic ¡Hablandol by Ramirez and Pizarro.
Even Zero B's seminal (and highly unavailable) Lock Up is here. This collection is presented complete with tasteful and fashionable on-screen stills.

Well sampled, seamless and presented in an uncluttered and pleasing form, this is a dance-on-disk milestone. The jury are stood on the sofa with their hands in the air... I think they quite like it.


Dance Classics vols 1 \& 2 - the best dance disks ever?

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## News from the world of Amiga games that's almost to hot to handle...

## Everybody walk the dinosaur...



## Too many cooks spoil the broth

Mindscape are one of the busiest software componies around at the moment. They haven't even released Alfred Chicken or Coptive 2 yet, but have already got another release planned.
Out to Lunch is an oddidive plofformer and feetures Pierre le Chef, on eccentric yet worldrenowned master of his trade. As he tours the world preparing intemational cuisine, his plans are plagued by setbocks.
Unfortunately for Pierre, the ingredients he requires for his dishes are unwilling to be used, so the bonkers chef must first copture ond contoin his
ingredients in "The Coge". Pierre must also avoid and destroy the diseoses and insects which infect or even eat his food.
Le Chef's main rival is an evil masked chef dressed in block called Chef Noir who is scheming to ruin Pierre's chances by releasing all his ingredients.
The game features 48 challenging levels spread across ssix countries, eoch with its own theme inducing specific foods and music to fully copture the Alavour of each country.

Levels indude the West Indies, Mexico and even


A still from Overdrive


Pierre le Chef is out to lunch
Pierre's home country of Fronce. Also featured are tons of secret levels, unique powervps and over 1,000 frames of superb humorous character ani- wors'." of track. For technical reasons it is one ployer only - although a serial link allows two ployers to compete head toheod - and involves racing through a combination of vehicles/trocks for prize money and fealures.
There are 4xAs, Formula One, Sports and Buggies - all of which handle differently on each of the five types of terrain. The game's feel is based on a number of oll-time classics of the genre including Super Sprint but on a much bigger scole.
Gamer had a quick look at the game of the ECTS and we were duly impressed. It looks like Team 17 are back with another
mations. Out to lunch is planned for release on Amiga of Christmos. Expect a preview in the couple of months, but in the meantime, chill out toke a gander of this paltry screenshot.

## Bullfrog hops back

Electronic Arts ore back in the froy with the releose is Syndicate. The brand new fitle from Bullfog, the an alors of the Populous and Powermonger series a games, Syndicate thus comes from one of the $n$ innovative soffware development teams in business.
The selting is a grim and dangerous futre wat some fime ater the Corporation Wars. The wort'l multi-national corporations had grown to such a extent that their power began to rival that of sod countries. The CHIP wos then developed.
The CHIP was a lecchologicol revdution that better flan any drug. Inserted into a person's heod ? could alter a person's perception of the outside wore and give them hope by numbing their senses to ter misery and squalor surrounding them.
For example a person living in a grimy aparmer block could buy a Mansion CHP which once insenere would moke the user believe he/she was living in a grand and expensive mansion.
Unfortunately this led to war between the corpore fions who were battling to monopolise CHIP manutox ture, toppling nations and governments in the process.
This greed begon to attract dangerous criminati and soon the crime syndicates had infiltroled the cor porate boordrooms. Using custom-built cybors ogents, they hunted down rivals and battled eod other for ulimate control of the entire globe.
You toke control of a young executive in one sud

## Team 17 rev up the releases

Team 17 hove been working on their forthcoming release Overdrive which will be released in July. Team 17 supremo Martyn Brown explains: "We felt that the overhead perspective racing genre had redly not been given adequate justice on the Amiga sove a couple of now old fitles so we thought we would give it the

The game is a very fost, very smooth and superbly ployoble rocer wiht four types of vehicle and five types


Project X re-released on budget


Syndicate is Bullfrog's biggest release since Populos 2
adicole who is looking to make a name for himself. fom his control plaform in an airship high obove the cily, he observes as his agents spread the shadow Iterror in a bid to conquer territory, ousting the rivol indicales and striving for warld domination.
The game features a stunning ofmospheric intro wequence with state-of-the-art, television broodcastocility rendered grophics. You are foced with over 50 missions, each set in a living cily populated by reteligent men and women, cars and commuter Toins, rivol agents and law enforcement forces.
With the use of new graphic technology and realtic sound effects including music and digitised peech, Syndicate is Bullfrog's most unique fitle to de.
It will avoilable in June for $£ 34.99$, so start to save for money now beccuse this is going to be worth erey penny.

## They call him Flipper

Digital lllusions are rumoured to be working on the third instoment of their highly successtul pinball series of games. The follow up to Pinboll Dreams and Fantasies will be entifled Pinball illusions. Sources soy that the third game will include a new mulit-ball fecture. Digital lllusions soy that they wanted to indude it in their previous gomes, but couldn't due to the foct that it slowed the oction down too much.
DI are trying to combat the problem by designing a brond spanking new mothematical model of a pinball toble which will speed it all up considerably. Look out for it around Chrismos time. Expect more news os we get it.

## Short 'n' sweet

- Psygnosis return to the Amiga scene with the follow-up to First Samurai. The sequel is side-splittingly entitled Second Samurai and gamers should expect more of the same. The sword-slashing adventure will this time have a simultaneous two-player option.
- Dark Seed fons will be pleased to know that the game won the 1993 Soffware Publisher's Association Excellence in Software Award in the Best Fantasy Role Playing/Adventure category. Even better news is that Cyberdreams are currently working on Dark Seed 2 which is meant to be ten times more scary and weird than the original.
- You can't beat a bit of Bully! Alternative Software's next release is Buly's Sporting Darts. It will retail at the incredibly low price of $£ 9.99$ and is unique in that it features six popular sports each played on a toilor made dartboard. Expect a full review next month.
- Alternative have also launched a brand new range of home computer games produced especially for 3 to 12 -year-olds.

The Children's Range is a collection of award winning and bestselling fitites with many based on populor TV and film charocters.
Included in the collection will be current tavourites such as Postman Pot, Thomas the Tank Engine, Popeye and The Munsters along with new arrivals Pixie \& Dixie, Huckleberry Hound and Alvin \& the Chipmunks. All games will sell of the low price of $£ 7.99$.

- The release of James Pond 3 has been put back to September. Subtitled Operation Starfish, it is a massive action-packed jump and run plafform game which will feature over 100 sections, large character sprites, extensive parallox scrolling last seen in Pond 2 and in two-player mode, Finnius Frog Pond's sidekick. It will initially be available for the A1200.
winner. Quick, grab Norris McWhirfer becouse Team 17 are record breokers. Alien Breed Special Edition recently celebrated its 2ind continuous week at number one in the Gollup 16 -bit budget chart.
This constitutes a brand new record, the previous longest stint being held by Rainbow Wlands which spent 21 weeks there.
It might not be a record for long becouse Team 17 are on the verge of releasing some more budgets. Next up will be a revised edifion of Project $X$.

The game features some lovely tweaks, wha as not losing weaponry when you die, thorter levels and in general changes which moke it more playable for everyone.

Also re-released on budget is Assassin which will also have changed a little from it's original format. The bero is now armed with a hand gun and the levels are built up of smaller stages rather than sprawling mazes.
Blimey, Team 17 are just about the most helpful and kindest software you could ever wish for. Which ather companies bother to change their earlier games in an attempt to improve gameplay? Maybe other sofware houses should sit up and toke notice because Team 17 are simply kidking your ass.


Improvements to Project X coming soon

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Enhance your life with all the latest Amiga games news. Enjoy!
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The definitive list of games that do or don't work on the A1200 Cheat Mode. ............... 128
Codemaster's latest Dizzy game is given a thorough bashing


The bonus round where Woody has to collect loads of dosh. The money is then turned into points
f there was ever a genre that's been over-used since the doy when computers first begon, it has to be the plafformer. The unusual thing about platformers is the fact that they ore almost identical to each other.
That blasted Mario has got a lot to answer for. Every since the early days of computers we've been plagued by Mario wannabes and Sonic lookolikes. The shame is that a lot of these are just pure unodulterated crap.
Plafformers are big business, moinly becouse everpoody loves them. I can bet that every gomer in the world has at least one in their collection. For every amazing one you can expect another 20 copycots which are a load of old rubbish.
The Amiga world is packed full of rubbish as well, but when a good plafform game comes out you know about it. Switchblade, Another World, Myth, Putty, Roinbow Islands, Zool and more recently Supertrog are just a few examples I could mention.
The thing is that these tend to be fairly easy and are quite small in size. Vision Software claim that Woody's World is the world's biggest Amiga plotform gome - a pretty brash and bold statement, especially as this is their very first full price release. It could well be true though. I've always fancied being a detective, so I'll don my deerstalker like Sherlock, my folse moustache like Poirot, hop in

$m y$ Jog like Morse, be for like Tosh from The Bill and investigate.
If you ask me, the evil boddies are a right pain. If they're not toking over a whole universe then they're robbing old Mrs Miggins, the lody down the street. This time in Woody's World they nicked a magic cystal and a few TVs and videos to boot.
The King was inconsolable because the crystal had been stolen. Kingy had lost control and his marbles and his kingdom had been overthrown by, yep you've guessed it, evil baddies.
Woody was just your average kind of hero whose thoughts were more concerned with the up and coming elf Olympics.
The King decided that Woody should find his beloved crystal beccuse of the fact that Woody is, umm, an athlete and con run fast, err probably.
The King then gave Woody a map and described each of the castles illustrated and the dangers that surrounded them. He exploined that there wos a seventh costle that was missing from the map. It was at this castle that the King thought Woody would (ho ho) find the magic crystal.
Woody knew that he would have to travel occoss his whole world to find the mysterious seventh castle, but if that's what the King wanted then that is what he would hove to do.
The chances of him finding the crystal before the Olympics would be very slim, but you never

> The people behind the PD classic Cybernetix are dipping their toes into the pond of full-time computer games publishing with Woody's World, allegedly the biggest Amiga plafform game in exisfence

## STEPPING STONES

The map of Woody's World. Venture forth from the Steam Castie and the world is your oyster...
know, he might iust get lucky. Woody then bounded off to complete his quest.
What this basically means is that this platformer involves you trekking through many different and varied levels in the desperate hope to find a crystol. A cheesy plot doesn't alwoys make for a bad piece of softwore though!
The odventure starts in the mysterious Steam Castle where Woody must beware of the, err, steam and also the evil beavers and birds that
inhobit the place. If you bumped in to Woody the street he'd look a fairly normal chap and it he was your mate you'd probably buy him a pint, ber Woody is for from normal. Remember irs alwon the quiet, shy, retiring types that ore the serid killers. Woody changes his appearance mort times than his underwear. He storts off in an of the-shoulder wizard outfit and isn't that hero-lite becouse he's quite slow and can only kill his ene mies by bouncing on their heads. Contained in te


Woody is finally let loose in the outside level, but if he doesn't watch it he'll playing the death level. Culp!


Woody would you please bee-have! Oh dear a sad pun, but I just couldn't resist it...

t's not everyday you get chased by rocks unless your name is Indiana Jones. One of the many problems in the cave level


Pre ore hundreds of heart blocks. When Woody args them with his heod he scores bonus points, at some of these blocks contoin special powerips. If you collect a sceptre, Woody transforms noo Prince Woody which gives him greater jumpng power and the ability to kick enemies.
If you manage to grab a crown then Woody Jrns into King Woody giving him greater unping power and the ability to fire stars at his memies, and he gets to wear a smart shiny crown oboot.
Each power-up also speeds Woody up thus noking the game more smooth and in the process sore enioyable to ploy.
The graphics in Woody's World are brilliant and easily rival the standard set in Roinbow Honds. In fact to put it into perspective, imagine a atesy puppy dog with sad eyes looking up at you -th its tongue out and begging with its paw.
Aww cute you moy think, but the grophics in Woody's are ten times cuter than that. Even when our hero dies it's really cute.
The backdrops are just as good as the sprites wh some really nice effects - they're as impresthe as anything I've seen for a long time.
For instance, take the clouds level where Woody jumps from cumulus to nimbus and where the wind actually blows our stocky hero all over the place moking the game more interesting that Int simply running through the level.
If I was stupid and didn't have much sense I could instantly compare this to Superfrog, but
some people will simply because it came out last month and is still in people's minds, but I won't because they are two totally different games.
If I had to compare it to anything îd probably be Mario, but seeing as the fat liolian plumber has never and will never appear on the Amiga I can quite happily compare it, so there.

On the sound front there is a whole abundance of fantastic tunes. The music seems to fit the action perfectly and for a change it doesn't get annoying - you could actually find yourself humming it, even when you're not playing! The sound effects are kept to a minimum, but are more than adequate for this type of game.
Playability-wise I can't really knock it. There aren't any design foults that I could find. It looks suited to small kids, but it's one of the hardest plafform games I've ever played and is recommended to plafform experts wanting a bit of a challenge.

You only get three lives and these will rapidly run out if you don't keep on collecting energy and extra lives. II'l toke you a while, before you actually manage to get through a few levels.
Lastability isn't a problem becouse I've carried out a thorough investigation and Woody's World is the biggest Amiga plafform game to date.
The number of levels is incredible. Put it this way - you won't be able to complete it very quickly unless you're some kind of computer games hero or genius. Vision have come up with a crock-


Aye Aye Cap'n. Woody takes the helm and in meantime has to fight, off some fish with an attitude problem...

er and for their full price debut they couldn't have written a better game. Woody's World has got everything - great graphics, top tunes, packed fill of playability and an addiction factor that is so dangerous it broke the Gamer addictive-o-meter.

If you liked Superfrog then this is your cup of tea and I would heartily recommend it to anyone, although it is a bit of the difficult side, but more than definitely worth persevering with. Wood you believe it a brilliant debut and no mistake. Plaftorm fans have never had it so good. JONATHAN MADDOCK


One of the elusive chests you need to complete the level. They didn't hide it very well, did they?

VISION


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## ACTHON

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The control screen－functional but not flashy


The managerial bit，in－depth enough if you want to get into the game but not too much to bog the gameplay

Twickerham
Date：1G／iz／9a
wind：Calm

England haue won the toss and will kick off

England＇s new all－stars team，England （Joystick）takes the pitch


## Sellofape back your ears and grunt at people with Domark＇s latest．．．

Avery timely release indeed this， with England steaming through the Rugby Sevens to win．It seems fitting that we should release a game and have a quick gloat．But this respectable win doesn＇t take away the foct that you have to be six foot two， 15 stone and drink masses of bitter to be a rugby
player．If you are a ten－stone weakling and a coward to boot like me you don＇t want to be on the wrong end of huge bloke hurrling through the air with an odd－shaped ball．
So what can you do if you silll want the excitement and the gameploy？Get the com－ puter game，of course．
When I first booted up IRC I was impressed by the smoothness with which everything ran．The fitle screen and intros were very tastoftlly executed leaving you in a good frome of mind for the game．
The control screen isn＇t the most detailed live seen but after a few minutes of fiddling you get the hang of what all the tools do． One aspect I found very impressive was the use of hot keys on the menus－it＇s pos－ sible to just press the one designated leter of the option you want instead of woiting until your cursor gets over there．By for my fovourite aspect is the foct that you can play the game on different levels，so if you are purely interested in the action，you can com－ pletely ignore the management side and vice－versa．

If you just fancy going for a quick knockabout you don＇t have to toke into occount that three of your men are injured and that you are in deep financial trouble－that is if yyou don＇t want to．As soon

as $\mathbb{R C}$ came into the office it was a cose of nudge nudge，wink wink，some plonker＇s made a rugby game．
But as it turns out hey have mode a pretty fair job of the control method．I＇s simiar to many of the fooball simulations－the mem－ ber of the team that you are controlling of one particular time is depided by on arrow above his head．This changes as the ball move around．

As you probobly know，you have to get the bal past the line of the end of the pitch and as near to the posts as you possibly can． Once this is achieved you can convert your tty and gain more points．

The conversion entails you kicking the boll from a set distance away over the crossbar but still between the two upright poles．In Rugby the conversions control is very similar to a golf sim－you have to dick of the right fime for the speed and power then you hove to click for the aim．

To pass to other players on your woy down the field there are two methods． You can either dick your button quickly and your player will make a pass in the direction where a team member should be，or you can hold down the button and a torget will appear．You have to do this pretty quickly and aiming tokes a bit of getting used to but it works in the end．As for as we could tell the
rules and the gameplay were almost perfect ly faithful to the real thing．
There was the occosional discrepancy or niggle，for instance when the opposition kick the ball bock into your half you men seem to run around it and not pick it up until the opposition hove cought up with it．But apart from that IRC is a winner！Well done Domark．

BEN STYLES

## VISION

## GのGOGO○OO

AUDIO －のロの○○○○○

DIFFICULTY ○○○○○○○○○

LASTABILITY 0000600000
A fun and very playable sports simulation．It must
 have been a tricky thing to do but Domark have made a very good job of it．

Publisher＞Domark
Developer＞Domark
Disks＞ 1
Price＞$\$ 25.99$ HD Install＞N／A

Size＞ 1 meg

The natural thing to do would be to compare Flashback with Another World. Although they are aesthetically very similar, Flashback offers much more in the way of gameplay than Another World did.
In fact, there is a common misconception that Flashback is actually a sequel to Another World. This is not the case, which is further reinforced by the fact that sequels to both Another World and Floshback ore under way.
Prince of Persia first set the stondard by which character animation was subsequently judged, then came Another World and Cruise for a Corpse, both by Delphine. Flashbock continues this animation excellence and throws in a large and healthy dollop of gameplay to boot.
Such animation, married with excellent background graphics, seems to be a trademark of games from our French friends. But despite the excellent visuols, they never quite seemed to moster that most ethereal ingredient of good gameplay until now that is.
Flashback is not only visually great - the control method, atmosphere and generol difficully level have been balanced to a point of perfection. This is a game everyone will finish because it will grob you by the throat and drag you back for more purely beccuse it's so good.

So, what's it all about, I heor you ask? Well, the story goes something like this. Conrad B Hart, a research scientist, has prepared his end-of-yeor thesis. He has developed a pair of glasses which can measure molecular density.

His device reveals diens, whose molecular densily is far greater than ours, living among the pop. ulation. As is the case with the mojority of oliens, they are not on Earth for a holiday but to toke the place over.

Unfortunately, Conrad's investigations raise sus: picion among the aliens who, quite understandably, don't want some human strolling around, conveying to all and sundry the exact nature of their presence on Earth. So, being a dever dick,


The Death Tower scenario is very reminiscent of the Arnold Schwarzennegger film, Running Man


Having completed the Death Tower, Conra wins the first prize, a ticket to Earth
combined with his fear of capture, Conrad prepares a holographic message and then saves the contents of his memory, which he then sends to his friend lan.

Conrad is eventually captured and his memory erased by the aliens. Still held captive, he manages to escape via a hoverbike with the aliens in hot pursuit,

During the chase, Conrod's bike is shot and he crashes to the jungle below. Content that Conrod did not survive the fall, his pursuers leave. However, Conrad is a lucky bugger and has survived the crash.

He awakes, not knowing who he is or where he is. This is where you take over. You have to guide Conrad on his mission to find his pal, lan, and to

recover his memory. However, as is the case with most missions, to find your memory as well as a bloke called lan, things are not going to be simple. There are codles of obstocles, most of which shoot at you, so some nilfy joystick manipulation will be required.
Thank goodness good d' Conrad just happens to have a rather mean handgun, which, as is humorously evident in so many TV Westerns, doesn't seem to exhaust its supply of bullets.

Thankfully, Flashback's control method is as good as the moin charocters animation which it controls. Too many good games have died a quick death due to poor joystick progromming and Delphine are obviously aware of hat foct.
Once you grab hold of the joystick, you will have Conrad running, jumping, rolling around and blasting baddies with consummate ease in no time.

In foct, the key to success is the ability to quickly moster the various movements which Conrad is able to do. Those of you who have ployed Prince of Persia will no doubt toke to the controls immediately as they are extremely similar.
As you guide Conrad around the various screens, blasting oway all opponents, you will also have to contend with puzzles. You will come across many objects such as a force field, antigrav belt and even exploding mice, all of which you will find useful.

Besides the amazing character animation and great bock-

that occur when such actions as picking up or object or using one are done.
An example is the shield which obsorbs for hits from a opponent, offer which you will de Various power outlets are dotted around the $=$ rain and when stood next to one, you mor recharge the shield to full strength.
Therefore, a good memory is invaluable wher you find your shield low. Knowing where the nea est power outlet is will improve your chances d survival against a particularly son-of-abi...I mear rather difficult to kill enemy or enemies, ond believe me, there are quite a few loitering around
One suspicion I was harbouring when asked s. review this was that Flashback, alhough visual stunning, was going to be one of those gameer whose philosophy is to put you right back to or unreasonably early position on the level shoult you be unfortunate enough to be killed.
I was pleasantly proven wrong on that point an the game hos various Save Game points at wal though-out positions on the levels. However, tee game isn't soved to disk, so if you turn off your Amiga you'll have to start from the very beginning of the level you are on. Combine this RAM sone feature throughout each level, with the level poss words which are

## Allow re to Errad.

Conrad takes off on a stolen hoverbike to get as much distance between himself and the aliens

> Delphine do it again with this excellent arcade adventure featuring jaw-dropping animation and eye-popping graphics
provided as you complete each part and you hove a system whereby even the most impatient of us who throw the joystick ogoinst the wall shouting "Oh $\$ ?^{\circ} £$, it took me oges to get to this pointl? will find adequate.
Most gamers expect a lof from today's games, both in terms of visuals and sonics. Well, from the screenshots, you can get a good idea of the overall look of the game - you'll just have to toke my word for it about the stunning onimation.
The sound effects are equally impressive. As well as various "spot soundracks" as you move from screen to screen, there are lots of sound effects interspersed throughout the game.

These are especially evident on levels which are outdoors, where you get the effect of chirps, bleats and general noises of hidden alien beasts ringing in your ears. Very almospheric I can tell you.

Besides the nasty occupants of this planet you find yourself on, which, in general, need to be shot as soon as you see thém, there are also some friendy folk eager to help (if only to moke a fast

Our hero lies unconscious, but still alive after the hoverbike crash. He's about to wake up in a not too friendly jungle
buck).
There is limited interaction with these people in that you simply walk over to them, press the joystick button and read the conversation between Conrod and the aforementioned person.
Many of the conversations will give clues as to your next course of action and pretty soon, Conrod regains his memory and the action really begins to speed up.
To condude, Flashback is as slick as a James Cameron film and I for one can't wait for the sequel.

DARREN EVANS


ICULTY GGGGGGGOO

LASTABILITY


A massive thumbs up! Great graphics, animation and sound all add up to a
superb gaming experience. I want more... now.

Publisher > US Gold
Developer > Delphine
Disks > 4
Price > $\$ 29.99$
HD Install > Yes
Size > 1 Mb

The chap down below is one of the more difficult opponents to kill


Never play the same level twice


The passengers will avoid water


Here's a novel variation on the old Lemmings theme. You play Kevin Codner, a man for whom integriy and bravery are so much a part of his moke-up that they might as well be his middle nomes. As you read the infimote interview with the man whose very acions yoúll soon be controlling, you redise the scale of your mission.
The SS lucifer is, you see, sinking, and fill of Dim Possengers, all with a marked disilike of rapidy rising wolers. Your iob is to guide them sofely from where they enter each compartment to the exit. Sounds pretty similar to Lemmings still, doesn't it?
There are differences, though. For a stort, kevin is an actual character who has nothing to do with the Dim Passengers. You can't moke the passengers actually do anything like you can Lemmings actions are controlled by a number of means apart from the passengers themselves, about which more later.
Also, the Dim Passengers might be lacking enough of the grey stuff to snatch the chair at MENSA from Sir Clive, but they haven't got a pathological desire to end it all in the same way hat our difffloving chums of old hove.
Indeed, theyll do everything they can to run away from the rising waters when they come across them.
Oh, and control is not via a crosshair and a mouse, but by the more conventionol joystick and Fire buttion approach, your buttion being used to set off bombs, pick things up and so on.
So, we've established that, although bosed on the lemmings ideo Sink or Swim has enough going for it to warrant consideration in its own right, so consider it we will.
Let's toke a wander through the average level, shall we? Kevin appears, followed very shortly by a number of Dim Passengers. They're big, chunky offairs, and there aren't

Kevin comes with his own bombs

that mony of them to look after. At the bottom of the screen are a lood of satistics which it certainly poys to keep your eye on - especialy the one that tells you how much oxygen you've got leff. There are windows for possengers remaining to be soved, lives, and how much t fime is leff on the fuses of ony bombs you've planted.

## JETPAC TO SAFETY

Various objects can be uftised as mentioned earlier. Jetpocs are very useful - when you pull hem off the wall, they drop into any rising waters which have stranded passengers in it, allowing the passengers to jelpoc to sofety, or the top of the screen - whichever comes first!
There's cargo knocking around, which you use to moke bridges and plofforms to complete on escape route for your passengers, but conversely it can get in the way, hindering the essential rove to the culute, in which cose you can move it.

Burst pipes shoot out fatal steam at housands of

## Kevin Codner stars in an action-packed platform romper that makes the Poseidon Adventure look like bath time

degrees. but you can crowl along them and seal them... all with your fire button!
There are various hazards apart from the waterbosed ones; cushers do just that to anything that gets in their way, for instonce. Many oher helps, hindrances and curious objects knock around the various levels - swinging chains, mognefic hoists, electic fields, crew lifts - all have their uses, and those that don't teach you to avoid them very quickly indeed. There's even an emergency life-raff for when things are all going horribly wrong.

Graphically the game is a couple of years behind its fime, with clumsy, not particularly well onimoted sprites - although it must be soid that the water effects are quite impressive, especially the wobbly refection of the Lucifer in the fitle screens. But the movement of the charocters does let it all down a litite, os does their rather pedestrian speed.

Soundwise too ifs OK, with some odmitedy very nice water effects, but ogain it seems to be a couple of years behinds its fime - the theme tue reminds me of one of the bet: ter PD music demo disks.

## SIMPLISTIC MAGIC

As for as the gameplay goes, irs a nice idea and a credible attempt to deviate from the Lemmings ideo, but like so many copied gomes, the more it deviotes, the more it seems to lose some kind of simplistic mogic. It feess rother duttered, with 100 much superfluous stuff going on.
This has the effect of moking it hard deciding exactly whor's happening, which in tum makes it hard to settle bock into some serious, conlemplafive, Pouse-on puzze-type thinking as one could do with great pleasure in Lemmings. $\mathrm{So}^{2}$, the preseritation is

OK, the idea - albeit borrowed - is an excle one, and the sound and graphics are passoble a nothing special.
I's the kind of game that, should you hor particular maritime bent, youll enioy, but for $=$ average gamesplyyer, Id say that there's o ld $=$ for slicker, smoother and more exciting stuff form Sink or swim? This one's struggling to tread were I'm ofroid.

PHIL MORSE

## VISION

## GGGGGG○OO

AUDIO

## 

DIFFICULTY OOOOOGOOOO

LASTABILITY ○○○○○○○○○

A nice idea, cluttered by average graphics, sound and gameplay. Still, Ben absolutely loves it, so if you're looking for an off-beat experience you could do worse.

Publisher > Zeppelin Games Ltd Developer > Zeppelin Games Ltd

Disks > 2
Price > $\$ 25.99$
HD Install > No
Size > 1 meg

Kevin Codner
does his
Tarzan thang

# HAM $10 N$ s HIP 

start of the season, so that you can orgonie friendlies, then select your best teom ond ge your ployers up to motch fifess. This is onte lithe touch ond irs the first time Ive seen it dox in a foolboll monagenent game.
As I mentioned before the real nomes ats that touch of reolism to the gome, but they dos hove the correct ages, so its only going to bes mother of time before you hove to re-nome your team to Parkside Old Folks Wanderers.

To stop this from hoppening CM 93 generates new ployers to come into the gone obviously you won't of heord of them, but i's nevertheless a very good ideo.

Another big oddtion to the game is the indr sion of foreign ployers into the tronsfer market. There are in foct 100 foreigners and the gone includes a wide variey of ployers ond countries Unless you're a lotally loopy footboll fon then you will never heard of ony of them opart from the odd Italion here ond there and that's only thonks to Channel Four's Sunday afternoon TV progromme. You never know, you might pidk up a Pele or Fvo !

Toke a gander at the screenshots and youl see that $C M 93$ is not grophically fontastic. The whole game is controlled using the mouse ond centres around a menu system which involves a lot of clicking.

The only grophic of interest is the choice of pictures which you can hove as your bockdrop to the game. There are seven or so to choose from.

You con choose a nice picture of the chorring Chelsea midfield dynomo Andy Townsend, or you con even leave it totally blank - the choice as they soy is yours..

One thing you should know about is the octral match day. Now this is nothing like whot I expected when I first sow it. The set-up of the screen is incredibly basic with the time set in te top right corner, the two team names and six \# He bars of the boltom.

You get a running commentory of the gome, but its all done in broken English. An example would be "Rush rounds keeper. Rolls it in net. Gool. Gool disollowed, Referee spothed handbal offence." It does seem stronge of first, but ofter

Stockport Squad
Trns Staf Leag Fixt $\operatorname{\text {Ficcs}}$ Info Rsru


The squad in full. Where on earth did I put Paul Gascoigne?

Manager then Gamer would be full up and besides I hoven't got time. Ill run through a few of them though. Basically everything hos been updated. The Premier league is now included plus all the cup competitions all hove their proper nomes.
All the player dato is now correct ond when you click on the ployer's name you get a full screen of stotistics. You basically get a full run down on the ployer in question from number of gools scored to his previous club history to the colour of his underpants.
This information coupled with the ployer's real nome gives CM 93 that edge of realism, simply becouse you con relate to the ployers better.
Oither features include a brond new scout system, ployer loans, upgrading of stodio, injury time, manoger's solary, own gools, win bonuses, more board comments and many more.
There is also a five-week gap before the

## Stockport Accounts



The other side of foothall... the accountant

## MANACER 193

(wait five mathes you become used to it. 4hat this type of game worrants amozing groph: Wel I can see the ref signoling to his linesFion and we ve ployed wo minutes of infury The, so Ill sum up for you.
Championstip Manager is the motr complate loaboill manogement sim I've cver ployed. The ther amount of detalithat's gone into it is unbe: Wabble. Simply becouse so much inte ond effort tas been.put in by the games creators, it screves a Gomer Gold.
Ever, thing you think should be in a manogement game is in Championship Manoger 93. Thernalionols, tronsters, scouts, penclies and so Ef ore all there. It will appeel to the dedicated booboll fon, but I dso tink it could do ratier -vil with other gamesployers beccuse it is so good.

Grophically is's not brilliont, but I don't think
is anywoy. The sound department is virtually non-existent with only o couple of cheers in there when you scare a goal, but again it's not the lipe of gome that needs sound. il's positively overflowing with ployability ond is highly addicive.

There ore two ways to buy the game. The first is to run down the shops and poy 529.99 for it. The second is to upgrode your originol Chompionship Manoger by sending the disks and 17.99 to those nice chaps at Intek who con be reached at: Championship Manager 99 , Intelek, PO Box 1738, Bournemouth 8448 KN .

- To putit simply, Championship Monoger is Ryon Giggs, wfile all the other manogement games ore Tony Adams. I rest my cose.

JONATHAN MADDOCK


W's that all important match day and County have won!


Amm, this
program is true to Ife. Look county play the long ball game, just like in real-life, coo!


VISION -0のOOOOOO

AUDIO GOOOOOOO

DIFFICULTY GOGGGGGGO

LASTABILITY जGヲGOGGGGO This is the best foot--ball management game that you can
(1) $01 / 0$ get, Graphically and

The teleprinter just like
Grandstand
have. Where's
Des Lynam when
you need him?
sonically it won't set your pants alight, but as far as playability and addiction go you can't go wrong. Brilliant.

Publisher > Domark
Developer > Interlek
Disks > 1
Price > $\$ 29.99$ / 57.99
HD Install > N/A
Size > 1 meg

Few sporting moments can stir the juices of the back page headline writers as effectively as yet another England cricketing disoster, especially when defeat at the hands of Sri Lanka occurs only a few months before the Ozzies turn up to defend the Ashes.

National pride demands a spirited performance and nothing short of victory will drag the names of the 11 unfortunate white-clad sportsman out of the ninth circle of hell to which every sports journo in Wapping banished them after the winter lour.

Graham Gooch's World Class Cricket is the latest of a small group of games which have atiempted to simulate the sport, and comes closer than anything yet released to the real thing.

Good games of this sort are difficult to produce because cricket doesn't lend itself as readily as football to a fast exciting computer game, but GGWCC combines simulation accurocy with slick gameplay and brings it off very nicely.

Just about every rule and aspect of cricket is


Superb graphics in play as lashing delivery goes in another


Howzat! An ozzie goes for just one run

## GRAMAMM (GOOCM <br> implemented, from LBWs to run-outs, and the superb graphics catch the eye as soon as play commences. <br> Crammed onto one disk as it is, GGWCC <br> WORLD CLASS CRICKET

loads quickly, plays quickly, and disk access is minimal, so nothing gets in the way of the simulation.

In play, the game can be as complex or simple as one likes, and there should be enough options to keep even the cricket fanatics happy. Play can be over anything from one to five days and the number of overs can be set from 20 to unlimited.

A selection of world teams is on offer, complete with realistic and current player lists, but the novice need only have the computer select the best 11 to proceed to the action.

The more finicky among us can chop and change team selection by dipping into the full squad, and the even more dedicated will find the option to edit teams, team names, and even players' individual characteristics to suit any taste.

It would, for instance, be perfectly possible for a nostalgic player to change the England and

Tired of watching the familiar old middle order collapse? Now's your chance to don the white jumper and see if you can do any befter

Australia line up to repeat the infomous "bodyline ${ }^{0}$ tour of the 30s complete with Don Bradman and company.

In play, bowling, batting, and fielding are all taken care of in simple but effective fashion. Bowling is a matter of placing the intended landing point for the ball then clicking the joystick button, at which point one of two things will happen depending on the type of bowler being used.

If playing a fast bowler, the player will see a speed bar in the corner of the screen which can be controlled by waggling the joystick back and forth to increase speed.

Spin bowlers vary in that they bring up a selection for leg or off spin, then the player wag. gles the joystick to increase the amount of spin. for odded realism, a natural leg spin bowler will be able to spin the ball faster in that direction.


Choose you weapon, all the best cricketing countries... and England

Batting can be tricky - my first innings score of ten all out should be ample testament to that but with practice and good timing the eight types of shot on offer give the player enough flexibility to deal with all sorts of bowlers.

There is little in the way of the delicate touch, but the choice of where in the crease to stand, when to hit the button, and which shot to play makes batting a challenging enough affair without fancy extras.

Once you manage to pull a decent shot out of the bag, joystick waggling is again needed to make the batsmen run at anything more than a relaxed canter, so play can become quite physical as one player waggles furiously to deliver a fast ball and the other does likewise to squeeze a single out of a short cut to the midfield.

Fielding is less controllable, but one feature I liked was the ability to set a different field placement for each bowler, then save them to disk for later use.

It is possible to arrange the fielders for one fast bowler then copy it to all the other fast bowlers, so quick tactics changes are possible before and during play.

When an opposing batsmen hits the ball, the display changes to a more distant view showing about a quarter of the field, and the fielder under control is highlighted by an arrow.

Players have little or no control over what happens, and my input seemed to be limited to just pressing the button to throw the ball.

Overall, despite using the same graphics for European, Caribbean, and Asian players, the lack of a tour or World Cup option, and a few reservations about some cricket fans' willingness
to indulge in joystick woggling, GGWCC is easi ly the best cricket game available on the Amigo and one of the most well polished and neatly implemented sports games l've ever had the pleasure to play.

STEVIE KENNEDY

## VISION -00000000

AUDIO


## DIFFICULTY



## LASTABILITY जबOGOOOOO

This is the best sports simulation for a while and easily the best cricket game around.

Publisher > Audiogenic Developer > Audiogenic Disks > 1
Price > $\mathbf{\$ 2 9 . 9 9}$
HD Install > N/A
Size > 1 Meg



Yes, well that's the normal procedure when robhing banks. Let's go to work!

Remember the days when games were simple? When the grophics and sound were basic and the fittes were stroightforward, like Asteroids or Frogger?
They more often than not told you something obout the game. For instonce, a game like Frogger obviously features a frog, but these days game creators just seem to call their games onything they want to, a prime example being Nippon Safes inc.
What on earth is that all about? Well, from the fitle you'd think irld be about a lood of Japanese sofes running around the world cousing hovoc and mayhem!
No, despite the fitle Nippon Safes Inc is an interacive adventure game, and it has to be soid that it's certainly a little bit strange. Not surreal and for out, but definitely weird.
It uniquely features three different central characters to choose from each with their own adventore and puzzles to solve. Each character's story proceeds alongside the others - they're irrevocably linked.
If's up to you wheher you decide to solve them one at a time or alternate between them. The charocters themselves are vastly different from one another, but they all have similar objectives.
The game is set in and around the fictifious city of Tyoko in Jopan where in the more disreputable parts of the metropolis a shady character has been wandering around looking suspicious. The object is to discover who he or she is and what they could be up to.
Nippon Sofes tokes a lot of its ideas from tradifional Japanese culture, incorporating tea moking, geisha girls, sumo and so on - although it is set in the 90 s.
IIs certainly like no other adventure game I've

> Strangely named and even stranger to play. Take a trip info the mysterious metropolis of Tyoko in this highly original adventure

played before and looks a lot different to everything else on the market ot the moment. The grophics aren't quite as impressive as Monkey Island 2, but they do have a unique look to them. The presentation makes a nice change and the whole thing has a very cartioon-like appeal and feel to it. All the characters are quite well animated.
Your perspective changes as you play the game. Ils hard to explain, but look at the screenshots on the page and you'll see the different views.
From the for away view on the highway to the full-screen close-up outside the Hot Sushi to the view from the Metro which uses only a small part of the screen, the different angles make it all that little bit more interesting.
Control is a point-and-click affair using the mouse, but there also is an icon system. This can be called up using the right mouse button and allows you to select either a command or an object


Doug Nuts fails the bank job for the 137th time! When will he ever learn...


Dino gets caught up in some dodgy dealings with a suspicious and shady character

## NP


to use. There are four commands in all. You can pick things up; examine objects; open and close objects; and most importanty talk to people.
When you tolk to another character, a picture of you and his or her head appears. You then get two or three choices on what to say and the conversation will continue like this until you've soid all you need to.
You can use objects with other objects, which can be done by holding the left mouse button down while clicking the right. All in all, the system is incredibly eosy to use.
Same of the puzzes are very strange and not quite as straightforward as in something like Monkey Island or Indiana Jones and the Fate of Atlantis. You'll solve most of them by stumbling around different parts of Tyoko.

Unless you check everything you're likely to miss an object which will become very important later on in the game. It's always best to pick up everything you find beccuse it can be a real hassle having to go back for stuff.
The centre of Tyoko is quite large, but several other parts of the cily can be accessed using the very reliable Metro tube trains. Once bought the ticket can be used as many times as you like and will never run out. British Rail toke note!
There is a certain amount of humour. For example, the programmers put in an appearance, but most of their jokes only opply to themselves.
Nippon Safes is nowhere near as funny as Monkey Island, but is for funnier than Jimmy Tarbuck. Its best point is that it's so different from everything else.
The presentation is spot on and all the grophics are brilliant, especially the backgrounds. There isn't much to listen to on the sound front, but there are several spot effects like birds tweeting in the park to test your ears out on.
At least there isn't a bloody annoying tune that plays all the way through like some other odventures I could mention, but won't.
The control system is well designed and you'll be able to master it after only a couple of minutes play. The biggest bonus has to be the foct that you've literaly got three games in one. All three odventures, despite having similar objectives, are completely different.

One thing I have to mention is the foct that the game comes on five disks, so a hard drive is a


## Donna Fatale

Donno is a variety actress who abondomea promising career as a bollet dancer to enter glitering world of show business. She orrine Tyoko dazzied by the promises of a sell- ${ }^{2}$ H impresario who, after hoving squandered di possessions, left her to a life on the border 1 of legality. Will do anything (ahem) to get dra in show business.

## I'm innoceeenent!



Dino tries his hardest to get a walk-on part on The Bill while on his way to the local nick


Outside the Hot Sushi and I wouldn't mess about with that bouncer if I were you...

## SAFES INC

## company

## Doug Nuts

An electronics genius who uses his knowledge fre unlowiul purposes although so for only with eeogre results. His coreer as on electronic engl. wer of Oxford ended when he was cought fidling the results of the exams stored in the foculy computer. Students, eh?

He then moved to Japan, the homelond of stecronics. He gets pidked up by the cops every fime one of his gadgets foils when trying to break into his local bonk. A dirty litite teo-leaf end no mistoke.


## Dino Fagioli

A former boxer with liolion origins. Basicolly a good and honest soul, but often folls into traps set by people taking odvontoge of the foct that he isn't very well endowed in the brain department.
After a series of defeats in the boxing world, he boorded a ship bound for Japan working as a deck hand. Following his umpteenth scrope, he was thrown off the ship in Tyoko, where he is desperately trying to moke ends meet.
definite must. If you do play on disks then you'll be swapping until the cows come hame - fine if you can put up with it If If you're gasping for an adventure having completed everything else around, Nippon Safes Inc could be well worth your time and money.

One thing I can't work out is just why the crealors called it Nippon Sofes Inc. I suppose it's just going have to be one of life's little mysteries.

JONATHAN MADDOCK


Doug Nuts is let out of prison and begins his adventure in the city of Tyoko

## VISION

 OOOOOOOOOAUDIO GGOGGGGOO

DIFFICULTY GGGGGGOGO

LASTABILITY GGGOGGGGO

This one of the strangest games l've ever played. The


The other three members of your group... on their way to the pub


The character creation screen with a very scary looking women being created

# WORLDS OF LEGEND 

I upsets me to see how little fime and effort it takes for such a large company to knock out a game like Worlds of Legend. The small amount of documentation that we got with states that it "provides new players with a completely new experience in adventure role playing". The sad foct is that it brings nothing new to the world of Amiga games; the way the game is constructed is about as original as writing another Spoce Invoders.
So now l've completely destroyed it, I should explain why. Well for a start it's a totally unoriginal idea - how may games in the last year or so can you name that entail you controlling four characters with a quest to fulfil? Each of the characters having their own ratings for dexterity, skill and so

## Can another role-playing adventure add anything new and fresh to a tired genre?

on? Sound familiar yet? The first to do this properly was Dungeon Master, which was and still is a classic. Some games have followed a slightly different vein and come good - Sabre Team for instance - but nothing has ever quite equalled the original.

Worlds of legend begins when a messenger comes to tell ane of the four members of the group of the death of his father. This death means that the land in which they live will be plunged into war. It is your job to investigate the faatility and


Whitesnake in their medieval period
stop the whole land falling into the wrong hands. As soon as you get the message that your father has been murdered, the rest of the land goes crazy and starts fighting. This makes it very hard to travel to different towns because most people won't let you in unless you have the proper pass, so to get in you have to bribe them or beat them up which can get pretty tedious because it's the same old thing time and time again.

The fight sequences are laughable. The computer does most of the fighting for you - all you have to do is occasionally make the wizard cast a spell or furn one of the fighters into a berserker. You can even make one of the other characters sing a song!

What that is supposed to do I don't know - some prat singing "Tie me kangaroo down, sport" to several bloodthirsty, alcoholcrazed psychopaths isn't going to have much effect, I fear.

To look at, the fight sequences remind me slightly of Space Crusade only not as detailed. There are some really nice touches to the screen, for instance in the top left-hand corner there is a dumpy looking dragon with a briefcase observing and octing as a cartographer.

But as a rule the graphical representation of the people you meet is pretty bog standard and uninteresting, and the animation pretty poor as well. The character control method is pretty simple

The main screen graphics aren't that hot but the little icons round the side are very nice

(124) CfyII P July 1993

- that's the game's saving grace, really. Nowhert does the gameplay involve you clicking on arroms moving your band left, right, forward or bad which is one thing I despise about the original Dungeon Master. But you do feel very limited as te what you actually have control over when playing Worlds of legend.

1 am , I'm afraid, very disappointed indeed.
BEN STYLES


you?

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| :---: | :---: | :---: | :---: |
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| A320 Airbus | YES |
| :---: | :---: |
| AV8B Harrier | YES |
| Abandoned Places | YES |
| Accolade All Favourites | NO |
| Accolade Pack | NO |
| Air Combat Aces Only G | UNSHIP Works |
| Air Support | YES |
| Airball | NO |
| Airbourne Ranger | NO |
| Alien Breed'92 | YES |
| Altered Beast | NO |
| Apidya | YES |
| Aquatic Games | YES |
| Archer Mclean's Pool | YES |
| Archipelagos | YES |
| Artura | NO |
| Axel's Magic Hammer | NO |
| B.S.S Jane Seymore | Disable Cache |
| Back To The Future 3 | YES |
| Bad Company | YES |
| Badlands | NO |
| Barbarians 2 (Palace) | NO |
| Barbarians 2 (Psygnosis) | YES |
| Batman The Movie | YES |
| Battle Chess | YES |
| Battle Chess 2 | NO |
| Battle isles | YES |
| Battle Ships | NO |
| Battle Valley | YES |
| Beach Volley | NO |
| Better Maths | YES |
| Bitmap Collection | NO |
| Blood Money | Disable Cache |
| Bloodwych | Disable Cache |
| Blue Max | YES |
| Bubble Bobble | NO |
| BudYesan | YES |
| CJ Elephant Antics | YES |
| CJ in U.S.A | Disable Cache |
| Cadaver | NO |
| Califormia Games | NO |
| Campaign | YES |
| Captain Blood | Disable Cache |
| Captain Dynamo | YES |
| Carrier Command | YES |
| Cartoon Classics Simpsons | NO - Rest YES |
| Castle Master | YES |
| Cave Mania | Disabled Cache |
| Chase H.Q | NO |
| Chessmaster 2100 | YES |
| Chicargo 90 | NO |
| Chips Challenger | NO |
| Chucki Egg | NO |
| Civilisation | YES |
| Combo Racer | YES |
| Continental Circus | NO |
| Conqueror | NO |
| Cool Croc Twins | YES |
| Count Duckula 2 | YES |
| Covert Action | YES |
| Crackdown | YES |
| Crazy Cars | NO |
| Crystal Kingdom Dizzy | YES |
| Curse of Enchantia | YES |
| Cyberball | NO |
| Damocles | NO |
| Deathrrap | Disable Cache |
| Delux Strip Teaser | YES |
| Demolition | NO |
| Disc | NO |
| Dizzy Collection | Disable Cache |
| Dizzy Excellent Adventure | YES |
| Dizzy Panic | YES |
| Dizzy Prince-Yolk Folk | YES |
| Dogs Of War | YES |
| Doodlebug | Disable Cache |
| Double Dragon 2 | NO |
| Double Dragon 3 | YES |
| Dragon Ninja | YES |
| Dragons Of Flame | NO |
| Dream Team T2 | YES - Rest NO |
| Drum Studio | NO |
| Dungeon Master+Chaos | YES |
| Dynasty Wars | NO |
| E-Motion | Disable Cache |
| Electronic Pool | NO |
| Elvira | YES |
| Emlyn Hughes | NO |
| Enforcer | NO |
| England Champion | YES |
| Epic | YES |
| Escape/Robot Monsters | NO |
| European RampageWWF2 | YES YES |

European Super League

## ATP00 awners

## The most comprehensive list yet produced of the games which work (or not) on the AI200

| Eye Of The Beholder | YES | Manchester United | NO |
| :---: | :---: | :---: | :---: |
| F16 Combat Pilot | NO | Max Compilation Only TU | RICAN2 Works |
| Falcon | YES | Mean 18+ Data Disk | NO |
| Fast Food | Works Too Fast | Mega Twins | NO |
| Ferrari F1 | YES | Mercs | Disable Cache |
| Fighter Mission | NO | Miami Chase | Works but Fast |
| Fighting Soccer | NO | Microprose F1-GP | YES |
| Final Command | NO | Midnight Resistance | NO |
| Final Flight Only | NO | Midwinter | NO |
| Final Flight Super Fight | YES | Midwinter 2 Flames | NO |
| Fire Force | NO | Mig 29 (Codemasters) | NO |
| Flimbo's Quest | Disable Cache | Mig 29M Super Fulcrum | YES |
| Footballer of The Year | YES | Monkey Island | S |
| Forgotten Worlds | YES | Monty Python | YES |
| Fun School 2 | YES | Moonwalker | NO |
| Fuzzball | Disable Cache | Mousetrap | NO |
| Games-Espana '92 | Disable Cache | Myth | YES |
| Gary Lineker's Hotshot | NO | Narc | NO |
| Gauntlet2 | YES | Navy Moves | Disable Cache |
| Gauntlet 3 | NO | New Zealand Story | NO |
| Gemi Wing | NO | Nigel Mansell Champ | YES |
| Global Effect | NO | Nightbreed The Movie | NO |
| Go For Gold | Disable Cache | Ninja Warriors | NO |
| Gold Rush | YES | Nitro Boost | NO |
| Goldrunner | NO | 10000 Turbo | YES |
| Grand Monster Slam | NO | Operation Thunderball | ES |
| Grid Iron | YES | Outrun | NO |
| Guardian Angel | Disable Cache | Outrun Europa | NO |
| Hagar | YES | Paperboy 1 | YES |
| Hard Ball | NO | Paperboy 2 | YES |
| Hard Drivin' | NO | Parasol Stars | YES |
| Harlequin | YES | Passing Shot | NO |
| Head Over Heels | YES | Phantasma | NO |
| Heimdall | NO | Pictionary | YES |
| Heroes Of The Lance | NO | Pinball Fantasies | S |
| Highway Patrol 2 | NO | Pit Fighter | S |
| Hitchhikers Guide | YES | Plutos | YES |
| Hollywood Collection On | Only BATMAN Works | Popeye 2 | NO |
| HoYes | YES | Populous 1 | NO |
| Horror Zombies | YES | Populous 2 | YES |
| Humans | NO | Postman Pat | YES |
| Ice Hockey | NO | Postman Pat 3 | YES |
| Impossamole | NO | Po | YES |
| Indy Fate Atlantis Act | YES | Pro Fight | NO |
| Indy's Last Crusade Act | NO | Prospector | YES |
| Indy's Last Crusade Adv. | YES | Protector | NO |
| International Soccer | NO | Push Over | YES |
| Italia 90 | NO | Putty | YES |
| Italy 1990 | YES | Puzznic | Disable Cache |
| Jaguar XJ220 | Disable Cache | Quadralien | NO |
| Jack Nicklaus Great 18 | YES | Quantox | YES |
| Jack Nicklaus Unlimited | YES | Quatro Fighters | YES |
| Jahangir Khan Squash | YES | Quest+ Glory | YES |
| James Pond | Disable Cache | Quest Of Agrvain | NO |
| Jet Set Willy 2 | Disable Cache | R-Type | YES |
| Jimmy White's Snooker | NO | Rail Road Tycoon | YES |
| Klck Off+ Extra Time | NO | Rainbow Island | YES |
| Kid Gloves | Disable Cache | Rambo3 | YES |
| Knightmare | YES | Raving Mad | YES |
| Kwick Snax | YES | Rebellion | NO |
| Kyrandia | NO | Red Lightning | YES |
| Last Battle | YES | Red Zone | YES |
| Last Ninja 2 | NO | Roadblasters | YES |
| Leander | YES | Robin Hood | YES |
| Lemmings + Oh No Morel | el Disable Cache | Robin Smith Cricket | NO |
| Lethal Weapon | YES | Robocod- James Pond 2 | YES |
| Little Puff | Disable Cache | RoboCop 2 | YES |
| Lotus 1 | NO | Robo Sport | NO |
| Lotus 2 | NO | Robozone | NO |
| Lure Of Temptress | YES | Rodland | YES |
| M1 Tank Platoon | YES | S.A.S Combat | YES |
| Magic Maths | YES | S.C.I - Chase HQ2 | NO |
| Magicland Dizzy | YES | S.E.U.C.K | YES |

Samurai
Santa's Xmas Caper
Savage
Seconds Out Boxing
Sensible Soccer 92/3
Seymour Goes Hollywood
Shadow Of Beast 3
Shadow Sorcerer
Shinobi
Shutllepack Cafe
Shuttie
Silent Service
Sinbad- Throne of Falcon
Sim Ant
Simpsons Bart V Mutants
Skid
Sky High Stuntman
Sightly Majic
Sly Spy
Snow Strike
Soccer Pinbal
Sorcerer
Sooty+Sweep Fun Numbers
Space Ace 2
Space Crusade
Space Quest 1
Special Forces
SpellBound
Spellbound Dizzy
Spidertronic
Spike IN Transylvania
Star Blaze
Starglider
Stargoo
Steel
Steel Empire
Disable Cache
Steg THe Slug
Steve Davis SnoYeser
Street Fighter 1
Street Fighter 2
Strider
Strider 2
Strip Teaser+ Data
Strike Fleet
Striker
Super All Stars
Super Fighters WWF - No REST -
Super Fighters
Super Grand Prix
Super Monaco GP
Super Off Road
Super Ski
Super Tetris
Swap
Switchblade 2
Swiv
3D Pool
Tag Team Wrestling
Test Drive
Test Drive 2
Thai Boxing
Thomas The Tank Engine
Thomas Tank Fun Words
Thunderblade
Thunderhawke
Thunderstrike
Top Banana
Tower Of Babel
Total Recall
Treasure Island Dizzy
Turbo Trax
Turrican
Tusker
Twin Turbos
Ultimate Golf
Viz
Voyager
W.W.F. 1

War Zone
Windwalker
Wing Commander
Wipe Out
Wiz Ball
Wiz Kid
World Class Boxing
World Class Leaderboard
World Class Rugby
World Cricket
World Series Cricket
X-Out
Z-Out
Zak McKracken
Zool


## SABRE TEAM

## At long last we can dig the dirt on the Krisalis's Sabre Team. We sent in Ben Styles to smoke some embassies and complete the jungle level

First off I will list the four best troops and their main abilities - these are the ones that I found to be tops, but a different combination may work better for you.

## W Jones - Trooper



His two most outstanding abilities are his speed and strength. He is very impressive when it comes to grenades as he can throw them much further than any of his colleogues.

Unfortunately, Jones is locking in the marksmanship department. This can be helped by giving him on L7A2 which will increase his ability.

He also lacks intelligence which plays a part in his ability to notice or hear things. His height can also occosionally be an advantage as he is pretty short.

## C Calvert - Trooper



As he is renowned for his speed and perception Calvert is exceptionally good at hearing and spotting enemy movement. He is quile good with a gun so he is more than capable of dealing with most situations.

He works best with a G3 which is the lightest weapon with the longest range. Make sure he is kitted out with at least two mogazines. This is because he will have more encounters due to his ability to spot trouble

## T L Roderick - Sergeant



The leader of the group is also the third fastest soldier in the party. His ability with a gun is incredible so you should arm him with the M16A2.

Although he possesses an average perception rating and poor strength, his other qualities more than make up for it. One final thing to remember! Do not, under any circumstances, expect him to throw a grenade accurately.

This is extremely important when he is accompanied by a hostage.

## L P McDonald - Lance Corporal



Although he is pretty much your Mr Average, McDonald has good speed, and when you give him an L7A2, his marksmanship is very good.

As the dodgy saying goes: "Jack of all trades, master of nonel" His main weakness is his perception but even in this department he is only second to Trooper Colvert.
Choosing the correct weopons and equipment is also important when you are about to enter a mission. Each player should be given a bullet-proof vest and an $\$ 10$ respirator. Give CS gas grenades (no
more than two) to Trooper Jones and Lance Corporal McDonald. Give the medical kit to McDonald as well (I'll explain later!) but don't use the spare. This will sofeguard you in cose McDonald is lost in action.
Make sure you only use one magazine for those guns that have a good capacity. Any more (except in the cose of Calvert) are a waste if your soldiers are cut down in action.

Stun grenades are the least effective weapons but they can actually kill an enemy when they are used at close range. They are quite limited, however, so try not to use them all.

## WEAPONS AND EQUIPMENT

## L7A2

Usually two shols from this machine gun are enough to take out the enemy at a great distance. Unfortunately, only two are available and ammo is scarce. If you tind any ammo for this gun, grab it quickly.

## M16A2 \& G3

These are usually the second choice for guns. There is nothing much between them in terms of close combat accuracy and weight. Three shots will usually kill someone but the G3 leaves a lot to be desired at great distances.

- Do not swap any weapon between the missions as this results in a loss of ammo which is already loaded in the guns.


## The medical kit

There are only two of these to begin with but you
can find some more on later missions. It is a good idea to split the team up into teams of two, each can then carry a medical kit, passing it on to the injured person.

## CS gas \& stun grenades

These two items are both very handy in tight corners when you are under attack from all sides. Make sure you have enough action points to throw them or you could end up in a tricky situation.

## Gas mask

An essential item and fortunately there are enough to go around.

## Bullet-proof vest

Another indispensoble item. It cuts down the amount of damage inflicted by bullets.



## General ips

Alwoys collect useful equipment from the deceased members of your team. For instance: gas mosks, builet proof vests, medical kits and any dacent weopons. Alwoys grob the medicol kit
Move slowly in teams of two and cover each other's bocks. Save of leost 20 action points in sticky situations.


## Hemer Z.K. Stariden



Mrrimgh: 10 \% $79 \%$
Inta. RP: 39 Leoded AP: 37 1. CG 7.62 min. 20 Round mazozine

$$
t
$$


ter chonce of gething on opportunity move.
When you are searching one of the huts and your turn ends, try to leove your soldier with his bock to the woll. This woy he con see all the camp ond it will be easier for him to survive.
IF you do get shot and manoge to survive, thy to heod for cover. The iwo best forms of cover cre the trees and huts so try to get to them if you hove enough action points left.

Even ofter you hove received treament, keep well hidden until you hove enough action points left to moke it to some more cover.
The more experienced players will find this level pretty easy to complete with just two soldiers, nomely Jones and Colvert. Although it will toke longer, youll be able to sove your other team members for the loter levels.

Your objective for mission one is to rescue four hostoges who are being held within the confines of a prisoner of war camp. Once all the hostages have been rescued you must guide the remaining members of your team to sofety.

When reinforcements are called in they usually come through the main gate that you used to enter the camp. It is a good idea if you leave one of your party on these gates to deal with them when they arrive. This acts as perfect protection when your other team members are bringing out hostages.

You'll probobly find that McDonald is the best man for the job. You can also leave a medical pack with him as he will be in the best position to aid any of his fellow soldiers.

The first two hostoges are in the hut at the bottom left hand-corner of the camp. Trooper Jones is the best man to tockle this as there are quite a few enemy soldiers potrolling the area. Using his speed, he can get in the door
and dispose of the main guard. The main guards, unlike the randomly-placed enemy troopers, are always positioned in the same place. One such guard is always near the main gates at the beginning of this level.

The next hostage is placed in the hut directly in front of the main gates. As this is the easiest hostage to rescue, Sergeant Roderick is best used here as he doesn't quite have the speed of Trooper Calvert.

The last hostage is situated in the hut to the for right of the comp. He is one of the trickiest to rescue because of the surrounding windows and the open space. Use Trooper Colvert to get the hostoge out and take him bock through the trees.

Don't toke him back near the fence as the reinforcements will be oble to pick you both off with considerable ease.

When operating your soldiers, alwoys try to leave them with about 15 action points at the end of their turn. This will give you a bet


Your team should be spread out otherwise the enemy could end your game in one go

Later this year one of our readers will be invited to go on a holiday of a lifetime - to just about anywhere in the world. It could see you basking in the Bahamas, or cruising in the Caribbean. It could be ambling around Australia, or night-clubbing in New York. Even trekking in Tibet, or pottering around the Pyramids. Literally, the world is your oyster ! It could be a holiday for one. Or for a whole family. Just as you wish - providing the total cost comes to no more than $£ 3,000$. How do you go about winning such a fantastic invitation? Simply by completing the coupon opposite and handing it in to your newsagent. He will then enter it for
this unique competition, in time for the draw which will take place on July 12.
If you win you will be asked to select the holiday of your choice from any you see on offer - either nationally advertised or available from your local travel agent. There will be absolutely no restriction on the location, or the company you choose to provide the holiday.

It will be entirely up to you to decide which is the right holiday to suit your tastes.
And that's not all. As a thank you to your own newsagent, we will also be sending him two free tickets for a fabulous holiday in Paris, staying at a top hotel, going on a grand sightseeing tour and taking in a spectacular show at an exotic night club!

nce you start getting to grips with the practical aspects of ARexx, one of the first issues that crops up is the control of its output. Since ARexx is so good with text-oriented applications, it makes sense to be able to present them attractively
Various solutions have been proposed for linking ARexx with Intuition, the Amiga's windowing environment. However, these can be tricky for beginners; we have looked at them in the past, and no doubt we will look at them again in the future. Today, instead, we will look at something much simpler.
I am referring to the presentation of text-based output, which, at first glance, seems very limited. After all, the only output facility supplied by ARexx is the restrictive SAY instruction, right?
Readers of this column will know that things are not quite that bad. Along with the SAY instruction. ARexx can open its own text output windows (consoles), and write to them just as if they were files.
In addition, by using the so-called ANSI codes, you can spice up your display, with some control over the colour, fonts and so on. We looked at this subject briefly, way back in October 92 , but there is currently enough interest to look at it again, in a bit more depth.

Of course, the trouble with using SAY is that it forces a Return after it has finished printing. You cannot write data on a line, get some more data, and then write it on the same line.

The way around this is to treat the console (ie the CLII window) as a file, and write data directly to it. This method is more flexible, and can be used to write either lines or characters. The procedure for opening a new window is very easy; we use the same function, openO, which we use for regular files.

The open() function takes three arguments. Firstly, a logical filename, or filehandle (which you specify), used for referring to the output stream. Secondly, the AmigaDOS specification for the window, which looks like this:

Device:x/y/width/height/nant/flags
The device is most often con: - there are others, but they will not concern us here. Workbench 2.0 users may also use the optional flags, for instance to add a Close gadget. You can also specify the AmigaDOS shorthand for the current CLI window, which is *:

Finally, there is a flag to say whether we are opening for reading or writing, which in our case is ' $w$.

Before writing, remember to test if your new window has opened successfully - something may have prevented it!
success $=$ openfoutput 1 ,'con:20/20/600/100/0ur window', 'w')
If success THEN writech(output1,'Did it.')
Remember that if you have opened your own console window it will close automatically as soon as your program exits. This may not give the user enough time to


ARexx output does not have to be totally boring
read all the information. In this case you should either have a short pause, or else specifically ask the user if he/she is ready to quit. The best way to pause is by calling the delay(tick function. A tick is $1 / 50$ of a second.

The delay() function is not a part of the main ARexx package, but is found in the rexxsupportlibrary supplied with ARexx. You should therefore ensure that it is available, either by having the line:

$$
\text { rxtib rexxsupport. Library } 0-300
$$

in your startup-sequence, or else by checking that it is presers from within the program:
If 'show(Libraries,'rerxsupport. (ibrary')
THEN addlib('rexxsupport. (ibrary', $0,-30,0)$

Now, onto a problem that is quite common once users star opening their own output windows. Suppose that a piece of code outputs some text, and then runs an AmigaDOS command which also outputs text, such as:
$|+*|$
success $=$ open(console,,$^{\prime * 1}$, 'w')
ten = vriteln(console, 'Here is the c: directory tisting')
address command 'list c:'
As long as the program is directing its output to the same CuI from which it was launched, you will not notice anything unusual. However, if the output is going to a different consolc for instance, if the first line had been:
success $=$ openfconsole,'con:10/10/300/70/Output window', 'w')
then the output of SAY and writech(console,) would appear in the new window, but the results of the AmigaDOS commands would still get printed out at the old window!

The naive approach to this problem is to redirect the


AmigaDOS output to a temporary file, and then to read and print this file out in the new window. It works, but it's messy.
There is a far simpler and more elegant approach, which is not often documented (even some of the available books $\mathrm{an}^{2}$ ARexx do not mention it; however more of that story next issue when we start reviewing the available ARexx literature... ).
ARexx maintains a logical filename, called STDOUT, where all output (including stuff from AmigaDOS) is directed. By default this is the initial CLI or Shell. In the above example, eves though you are writing to a new window, AmigaDOS is stit writing to STDOUT.

The obvious thing to do then, is to close STDOUT, and reopen it in your new window. After this, everything will appezs there correctly. Even the output of the SAY instruction will appear in the new window, since SAY XXXx is equivalent 10 writeln(STDOUT",xxxx). Here is an example:
/* changing stDout */
suct $=$ close ('STDOUT')
/* output is nov disabled */
succ $=$ open('STDOUT','con:20/20/250/100/Nev STDOUT', 'v')
i* all output is nov redirected to new window */
say 'Here is the c: directory listing:'
hodress command 'list c:'
len = uriteln('STDOUT','zez Byt for now $=z=$ ') delay (100)
/* ANSI_deno.rexx */
/* The vindow we'll use *)
vindov = 'con:220/20/200/200/Counters...
open(output,windov,' 'v')
/t Sone codes ve use */
CSI = '9b'x
bold $=$ pen(1) ; italic $=$ pen(3)
under $=$ pen( $(4)$; reset $=$ pen( 0 )
tab2 $=10909$ 'x
nevline = CSI || E
setwhite $=\operatorname{cs1} \|{ }^{1} 0 ;$ OH' $^{\prime} \|$ pen(41) || csi || |
clockpen $=\operatorname{pen}\left({ }^{\prime} 32 ; 4^{\prime}\right.$ ')
blackpen $=$ pen( $(32 ; 41$ ')
clockfield $=$ csi || ${ }^{\prime}$; ; 10 H '
/* Set up our window */
writech(output, setwhite)
writech(output, clockpen || clockfield || tire()) writeln(output, cS1 || '4E')
writein(output, blackpen II ' Do sone counting:') writeln(output, cs1 || '2E')
vriteln(output, bold || blackpen 'Wurber' reset)
writeln(output, ftalic |I blackpen 'Hex' reset)
writeln(output, blackpen 'thar.')
writeln(output, " under || 'sin( $\mathrm{i} / 10$ )' $|\mid$ reset)
/* A report locp */
00 $i=65$ to 90
writeln(output, clockpen || clockfield || tine())
writeln(output, blackpen)
vriteln(output, tSI || '6E'
nevline tab2 II i,
nexline tab2 || d2x(i),
newline tab? || dzc(i),
newline tab2 i| delstr $(\operatorname{tsin}(\mathrm{i} / 10), 6))$
/* Delstre() was used to forsat the $\sin ()$ )
/* The + sign converts the characters */
/* received fron rexinathlib to a number */
END
delay (100)
ExIT
/* Function for easier graphic codes */
pen:
RETUEN CSI || arg(1) || 'n'

## Listing I

ARexx also maintains two other logical filenames, or streams, called STDIN and STDERR. STDIN is the regular input, from which data is PULLed, and STDERR is used when tracing a program. If the global tracing console is open, it takes over as STDERR. The other way of controlling the appearance of the output is by means of ANSI codes. These are special characters, included in the text, which will not appear when it is printed..
They are most commonly used for creating effects like bold or italic text, and for changing the colour of the text and background.
An ANSI code is indicated by a Control Sequence Introducer, which is most often Escl (or 'lb5b'x in ARexx), followed by the code. 9b'x can also be used.

The ANSI codes for the control of the console can do much more than just change the colour and the style of the text. They provide full control of the console, including random positioning of the cursor, control of tabulation, insertion and deletion of lines, clearing of the display, as well as a few more arcane, Amiga-specific functions.
With these resources at their disposal, ARexx programmers can
make versatile and useful displays, without having to resort to GUI programming. These displays are somewhat like the old DOS cursor driven displays or the Unix "curses" envi-
 ronment - not exactly state of the art, but they do the job.

A fairly comprehensive listing of the ANSI commands can be found in the Amiga ROM Kemel Manuals under console.device, but any ANSI documentation should list them. The codes are a machine independent standard. ANSI is the American National Standards Institute, a bit like our own BSI. There are many consoles and terminals that conform to the AVSI standard, and it is widespread in the comms world.

In addition many textfile readers (such as Muchmore) will accept embedded ANSI codes, and display them correctly. I have included a table of the most common and useful codes. In conjunction with the example shown in Listing I, which you can run and watch, you may get a few ideas for your own programs.

# tuned lettering 

## Commonly used ANSI codes

- $\langle n\rangle$ indicates a value and should not be typed directly.

| Esc<<n>6 | Insert n characters (characters must follow) |
| :---: | :---: |
| Esc<<n>A | Cursor n positions up (preserve horiz' pos') |
| Escl<n>B | Cursor n positions down (preserve horiz pos') |
| Esc<<n>C | Cursor n positions forward |
| Escl<n>0 | Cursor n positions back |
| Esc\|<n>E | Cursor to next line |
| Esclen>F | Cursor to previous line |
| Esci<n1,n2>H | Cursor to position $\mathrm{nl}, \mathrm{n} 2$ |
| Esc<<n>] | Clear screen to end of display |
|  | Erase to end of line |
| Esc\|<n>1. | Insert a line |
| Esc[<n>M | Delete a line |
| Esc<n>P | Delete a character |
| Esc/ n >m | This code controls the graphics rendition. Multiple values for n , separated by semicolons are acceptable, E.g. Escl3:32:i1m |


| n All systems | n Workhench 2.0 only |
| :---: | :---: |
| 0 Reset values |  |
| 1 Boldface | 22 Bold off |
| 3 Italic | 23 Italic off |
| 4 Underline | 24 Underline off |
| 7 Reversed | 27 Reversed |
| 30.37 | Character colour (pen) |
| 40-47 | Cell colour (background) |
| The following are not ANSI codes, just regular usefm ASCII codes that produce effects at the con sole: |  |
| -07x | Beep (tirish on the Amiga) |
| 08x | Backspace |
| .09\% | Next Tab |

Alex Gian looks at ways of making your ARexx text output more interesting

## TAKB CO NAND  <br>  <br> THES LONG AWHAITEDSEOUEL TO THES ANVARD WINNING TEAM YANREES \& PACIFIG ISLANDS <br> $1995 \ldots$ The Iraqi fipoublican Guard have overrun the oilfields of Northern Kuwait. War in the Gulf follows the fortunes of a crack unit of M1 tanks as the action unfolds.

Flightpaths seems quite promising with two disks, a video and a mini manual - all for $\$ 49.95$. However after close inspection of the photocopied video seeve - complete with a different font for almost ever word my confidence slowly began to fade.

Intrigued by the dodgy packaging, I sat back ready to be mpressed by the contents of the aforesaid video. Alas the extefior was only a taste of what lurked within.
The action began with a spectacular example of Amiga ideographics at their most cheesy with the graphics outdone only by backing music which screamed out for a vocal overdub along the lines of: "Hi my name is Sven, would you like to see my knockwurst? (?)
After suppressing the urge to do the overdub myself, a disembodied voice of a thankfully anonymous orator began bestowing the virtues of the software to a now thoroughly unconvinced voyeur.
Apparently the whole point of this 25 -minute epic is to explain how to use the move requester and more precisely its load option - the key to application of Flightpaths - otherwise known as pre-saved DPaint move files.
Over 200 moves await, 130 of which are multiples building into a varied collection of fairly complex and admittedly quite impressive manoeuvres, while the remaining 70 consist of standard single move ins and outs.
In the case of the multiple effects, each move segment is oaded sequentially and applied to the brush offering a variety of complete effects with titles such as chute, bounce, leaf, ricohet and so on.
As you've probably deduced, the moves available are primarily aimed at text with either complete words or their component letters flying about the screen according to the specified effect.
In addition, styles can be mixed within multiple brush anims to vary the performance. The necessary techniques and essen-


State-of-the-art scalable fonts for the serious videophile
tial hints and tips are provided during the video thereby helping to make sense of the rather sparse manual.

Im not exactly impressed by a collection of move files lumped together on a floppy retailing at $£ 49.95$. Of course you do get a free fonts disk with not one but two colour fonts, each with four fill styles and a selection of alternate palettes - what a bargain!

Oh yes, and let's not forget the video 25 minutes of lift music and jerky graphics spattered with the odd Scala backdrop and transition - obviously in a vain attempt to add some much-needed glamour.
If you happen to be utterly useless when it comes to the move requester, Flightpaths does offer a viable solution. However if you are looking for quality titling, investing in either BAS2 or ScalaHVT would be a much more effective use of your cash.

It's obvious that the creators of
 Flightpaths have a detailed knowledge of

# Flights of fancy 

DPaint and as a result would have produced a much more viable product if the video was a complete tricks-of-the-trade guide to DPaint with the move files thrown in as an added bonus.

Quite simply, paying $\$ 49.95$ for a collection of move files no matter how clever - is simply out of the question.

If Mediascape decide to slash the price by half, Flightpaths could be worth the investment for the dedicated DPaint user, but at the moment the product simply doesn't justify the asking price. For more information contact Mediascape on 0533 863501

> Paul Austin takes off with Flightpaths and peruses Agfa's impressive selection of video-specific fonts

As old computer hands will be aware, Agfa Typography Ltd are the de facto standard when it comes to font technology whether it be Mac, PC, Amiga or whatever else.
With such an illustrious background It's not a total surprise that their Video Unlimited fonts are of great quality - if perhaps a little pricey at $£ 45$ for the 25 typefaces on offer.
Although the prospect of spending 245 might not be your first choice when it comes to improving presentation, the Agla collection isn't a simple selection of bitmaps. In fact all the typefaces included are scalable being designed specifically for WB 2.04 and above. For those not familiar with scalable technology, such tonts can be scated to any size you

## Workbench 2 Unlimited

require without affecting their quality, in a similar vein to the PosiScript fonts used to lay out this page.

This brief excursion into publishing reveals another potential use for the Agta collection. Due to their scalable design all the fonts can be used direct within DTP packages such as PageStream2 thereby allowing seamless continuity between video and any hard copy that may accompany it.
The buit-in versatility doesn't stop there - in fact the growing popularity of scalable fonts means that continuity can spread across an entire multimedia pro-
duction with presentation, painting and publishing all combining to produce a uniform quality production.

As you'd expect from a collection costing $£ 45$, an installer comes as part of the package, however in my experience by far the easiest and quickest way to install any scalable font is to temporarily cast the installer aside and simply copy the <(I)fontname\{D].type for each font into the Bullet Outilines draw in you fonts directory.

Once sately added simply run the intellifonts utility from Workbench which will promplly Inform that installation is not
complete, at which point simply finish the process by clicking OK for each font you've added. Alas it's not all good news especially for DPaint fans as 10 per cent of the fonts in the collection flatly refuse to work with DPaint.
However the fault doesn't appear to be with the fonts themselves as all work perfectly with other packages such as PageStream - perhaps it's time for yet another update to the DPaintiv.
If you're interested in the Agfa collection contact Megatype on 0759 58988. If the Agla asking price is a bit much but you're still interested in additional scal able fonts try contacting George Thompson Services for information on their PD scalable font collection on 0707 664654.

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1his month's programming page features graphics, text, and Intuition window events for new assembler programmers. There is also a home grown pseudo-random number generator which will give a random number in a required range.
The last Programming page featured Intuition window events, and graphics library routines for C programmers. When an event occurs in an active Intuition window, an informational message is generated. Blocks of data (or data structures) called message ports can be used to communicate with these messages.
An Intuition window has two separate message ports, the UserPort for IDCMP events, and the WindowPort for window events handled automatically by Intuition.
Each IDCMP flag represents an event that a program could be informed about by a message in the window's UserPort. The main feature of an Intuition program is usually a polling loop which waits for an event to occur and interprets the message.
The demonstration program's blue window polling loop waits for a VANILLAKEY, MOUSEBUTTONS, WINDOWCLOSE or INTUTIICKS event to occur, stores the class and code in its own variables and releases the memory for the next incoming message.
The second window has a message port that is only informed about MOUSEBUTTON and RAWKEY events.
When a key is pressed, it can be interpreted as a RAWKEY or Vanillakey event. For a Rawkey event, the code structure member of the Intuimessage contains the raw key code, depending on the key's position on the keyboard. For a Vaniliakey event, the Ascii value of the key is stored as the "code" value.
A low resolution screen is like a page with 256 narrow lines, and 320 dots(pixels) on each line. Each pixel can be clear (logical colour 0 ) or set in logical colour 1. Each logical colour is allocated a physical colour, made up of differing proportions of red, green and blue.
If more than one page (orbitplane) is used, more logical colours are available. The Amiga graphics library commands can draw lines and shapes, paint large areas, or write on the screen.
Many of these commands used the address of the Window's RastPort, which is a structure containing all the Window's options for drawing shapes or producing letters on

## Assembling

# windows 

## PROGRAMIVING

with any flags used, is found in an Amiga Assembler header file.
The routine SetAPen() can be used to change the logical colour of the foreground pen, SetDrMdO can be used to change the way the foreground pen is used, relative to the background.

The Draw( command will draw a line between two given pixels on the screen, and the RectFillO command will fill a given rectangle in the current foreground colour.

The Move() command will move the graphics cursor to specific pixel on the screen. The TextO routine can be used to display a given string of Ascii characters, from a starting point at the graphics cursor.

The cursor's x (or horizontal) position gives the left hand edge, and the $y$ (or vertical) position the baseline of the first letter.

The SetRGBO command can change the quantity of red, green and blue in one of the screen's logical colours. The routine
 uses the address of the Screen's ViewPort, which is a structure containing all the Screen's display options (see the Assembler header files for the full structure).
The DisplayBeep( command flashes the screen's background colour briefly - it takes the address of the Screen structure as input.

## Random seeds in microseconds

A routine is needed to generate random numbers. Higher level computer languages, like C , have a pre-written tibrary routines.

Most computers use a pseudo-random number generator, which will give a series of random numbers, starting from an initial number or seed.

Each time the current number is modified by a bit of arithmetic, so that a different number will be generated next time the routine is used. My routine doubles the last random number, EORs it with a constant, and stores the result.

If the initial number is not seeded, or given a unique initial value, the sequence of random numbers will be
the same every time the program is run. By reading the microseconds from the system time, a unique number can be used to seed the random number generator.
The Intuition library routine CurrentTime() can give this value, or a lower level command from the timer device can be used.
The timer device is a collection of software routines like a library. When a device is opened, there is an associated parameter block which contains all the structures a device may need to handle incoming and outgoing messages.
The Message structure includes a node (which keeps the message place
in a linked list) a message port (for replies) and the length of the message in bytes. The message port in turn has its node, tlags, its own stgnal bit, its task, and a pointer to the header of the task list.

For reading and writing the time, messages are not required, and most of the values and pointers are null. There is an extended bock for timer requests, using values form the TIMEVAL structure.
The timer device can be set up, as in the fully documented source code of the demonstration program, and a timer request block intilalised for the commands and the data, and the system time obtained.

Margaret Stanger looks at text and graphics in intuition windows for assembler programmers

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Tf you've not encountered Superjam before, a brief history lesson is probably in order. As the name suggests, the package is essentially the Amiga's very own version of Band in a Box, with numerous unique refinements thrown in which make it ideal for both beginners and experts alike.
The idea behind the system is that you're provided with a fivepiece backing band which can then be orchestrated via a selection of styles. Your primary input is providing the styles and a suitable chord progression for your automated counterparts to lam along with.
In theory, the quintet will then jam an infinite number of variations on the theme - no matter how many repeats are made and believe it or not 99.9 per cent of the time that's exactly what happens!
This access to infinite variety is personified in the Section Design window, an area which invariably becomes the next stop on the creative road after setting up instrument patches and experimented with the various styles on offer.
Once safely entrenched in the section window you're presented with the specified number of bars complete with all the virtual musicians mapped above.
You then simply punch in/out the various players as required and assign your preferred chord changes via a pop-up requester offering literally every chord imaginable - and if by some weird quirk of fate the chord you require isn't on hand you can create your own in seconds courtesy of yet another pop-up requester
Your newly created masterpiece can then be played and more
touch is the option to select between two octaves when making chord changes which in effect means much more direct user control over the virtual musicians during the construction of sections.

For the musically disabled, an embarrassingly simple system entitled the Eas-O-Matic MusicMaker has been added which in effect means the software will not only jam around the chosen chords but will also generate a fitting chord progression for you.

When active, simply tapping in suitable rhythm on a selection of four keys generates a fitting riff or progression for the selected style - spoon feeding at its most patronising perhaps but nevertheless quite handy if inspiration alludes and either studio time or deadlines are a little too close for comfort.

Yet another major innovation is the addition of graphic volume and pan editing with all the players depicted as icons within
 a small matrix.
With the assistance of the mouse they can
importantly saved by the program's Snapshot function. Due to Superjam's tendency to Jam over every playback, the snapshot option becomes essential to preserve you favourite version of each measure within the bar.

Once active the snapshot holds the last playback for

# Won't you c Jammin' 2? 

 each instrument in each bar.If the bar is then locked the playback will always repeat the selected variation. As a result it's easy to build the best section possible by simply auditioning the passage bar by bar to build the best possible verse, chorus or whatever.

In addition, the much-hyped Turbo sounds and samples which claimed to offer a stereo Superjam voice direct from the Amiga sound chip flatly refused to do as promised.

Fortunately, this again has been revised and now both Turbosound - alias FM synthesis sounds - and Turbo Samples both work perfectly in stereo.

Perhaps the most dramatic improvement of the new version is four grooves within each style which in effect mean a song in a specific style can build and vary within itself before the various players add their own embellishments.

Thankfully Blue Ribbon have also added patch storing within each style, so now if you create a selection of patches which are ideal for that particular style they remain resident every time you apply that style in the future productions - saving literally hours of irritation and re-selection for regular users. Another pleasant


Using Super Jam from within Bars \& Pipes Pro
be moved up, down, left and right, thereby adjusting the output in real time - even during playback.

Although the title and game-esque graphics do tend to paint a picture of a glorified version of a cheap and cheerful Casio variant, don't be deceived. Under the user-friendly veneer lurk some real power features.

Like most quality products, the closer you look, the better it becomes. In the case of Superfam1.1, this is personified by style editing options built-in to the software

Thanks to this hidden depth, it's possible to dissect any style removing any elements which offend, or perhaps create new styles using an existing style as a foundation.

With the assistance of standard B\&PPro editing tools, the imperfections can be removed from your virtual drummer's technique prior to recording the section thereby saving valuable editing time later on.

The reference to editing offers a prime opportunity to round off the column with a mention of Superjam's potential as an accessory to the aforementioned B\&PPro.

Although SuperJam and B\&PPro are pretty special as individuals, when combined Superjam really starts to shine. Once installed, Superjaml.1 provides virtual musicians as tools which can be dropped direct into the B\&PPro pipeline.

Although the cutsie graphics and title don't inspire much confidence, don't be put off. For the amateur it's a great learning tool that can be fun as well as functional. For the professional it's very much a matter of application.

For would-be pop stars there's very little originality, however if you need quality lift music for video, multimedia or whatever else, it's ideal and worth every penny.

> Paul Austin explores a major update to Blue Ribbon's smash hit music generator as the new SuperJam takes to the stage


1he subject of computer security is one which will never go away. If it's not the guy next door peeking in your window it's the government listening to your phone calls.

It's a paranoid world out there, and none more paranoid than the USA where more people are frightened of the FBI than they are of the bad guys.

But Land of The Free, Home of the Brave is also home to some security which is for free. PGP stands for Pretty Good Privacy, an encryption software which is highly portable, PD (with only marginal pressure to pay any money, sort of guiltware) and very high security.

Anyone who happens across any files you might have will find it totally impossible to get at it unless they have the key. The system is so well made, in fact, that the FBI want to make it illegal.

Yes, unbelievably they want to force all security software to have a trapdoor to which they have the key. Thank God such things couldn't happen here.

Or could they? In case they do I'd get a line on this privacy thing before it's too late!

## PUBLIC-KEY ENCRYPTION

1 got my copy from Intenet, and it treally very impressive. PGP Amiga port author Colin Plumb told me that "a mostlyworking version of PGP 2.2 is available on your local aminet site. I use ftp.etsu.edu in Texas, and the centre of the universe is amiga.physik.unizh.ch, in Switzerland.
-I think there's one in England; the amiga.physik.unizh.ch welcome screen gives a list. It's not part of the official release (a few glitches relating to temp file placement), but it works well enough.

Indeed it does. PGP uses public-key encryption to protect Email and data files. It allows you to communicate securely with people you've never met, with no secure channels needed for prior exchange of the keys you need to decrypt the files.

PGP is a high security cryptographic software application. According to the author Philip Zimmerman, PGP allows you to exchange files or messages "with privacy, authentication and convenience.
"Privacy means that only those intended to receive a message can read it. Authentication means that messages that appear to be from a particular person can only have originated from that person.
*Convenience means that privacy and authentication are provided without the hassles of managing keys associated

with conventional cryptographic software."

No secure channels are needed to exchange keys between users, which makes PGP much easier to use. This is because PGP is based on a powerful new technology called "public key" cryptography. This technology has been available to high end users for some time, like governments and military, but PGP is public key cryptography for the masses.

A single key system works by me having a key to decrypt something you send me. We both have the same key.

## Top secret!



That key has to be sent to the other person securely, or you risk it being stolen and the encryption is rendered useless. So you send the keys back and forth through secure channels... but if you have a really secure channel what do you need encryption for? This is where public keys come in.

## COMPLEMENTARY KEY

In public key cryptosystems, everyone has two related complementary keys, a publicly revealed key and a secret key. Each key unlocks the code that the other key makes. Knowing the public key does not help you deduce the corresponding secret key. The public key can be published and widely published across the communications network.

This protocol provides privacy without the need

## Big brother?

Why are so many agencies alarmed by something which provides better security on computer files, the property of private individuals like you and I, which they shouldn't be allowed to see in the first place?

OK, so all this could just be hype to get the program noticed, but I don't think so. Why bother, especially as they're not charging for it? The sad fact is that now international bodies have noticed computers and computer networks, they want to at best be able to peek into them whenever they want, and at worst take control of them completely.

Sounds like paranold rubblsh, but it's a fact of life in some places. Eastern Bloc countries now free from communism are tooling up with programs like PGP so that the "police state", should it arise refreshed from its little sleep can't stomp all over their newly-spread computer networks.

You may not think such measures are necessary in the UK, and to an extent you'd be right. Of course we have a reasonably stable society and nobody really wants to pry into your private life. But...
for the secure channels that a conventional cryptosystem requires. It's complex but doubly secure.

It doesn't matter if you distribute keys in nonsecure channels because if you aren't authorised to open the file you can't use it. The keys rely on each other to decrypt the file. Which is what all the legal heat in the US is all about.

All this legal nonsense is very disturbing, as it is disproportionate to the impact such a technology will have on computer security - you have been able to protect files on your computer for years anyway, as anyone with a copy of TransScript will tell you.

If like me you're deeply paranoid regardless of assurances to the contrary, you'll buckle up now and worry about people calling you a maniac later. You're being private if you send letters in envelopes rather than on postcards, so why send your Email open to anyone with the desire to peek at electronic media?

> Phil South looks at a system which ensures nothing you send through your modem can be seen by anyone except the intended recipient

## Secure contacts...

Sources of PGP for all platforms are available via anonymous FTP on Internet and very soon on your local friendly securityconscious BBS. Or Email the writers:

Philip Zimmerman prz@sage.cgd.ucar.edu

Colin Plumb
colin@web.apc.org


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Fractals are a popular use for home computers. Their creation is a tricky thing involving a lot of maths and heavy duty repetitive calculations.
In fact without computers there would be no fractals, because although mathematicians who invented the processes like Mandelbrot and Julia did long-hand calculations on paper, the true beauty of fractals didn't really shine through until the advent of personal computers in the late 70s.
To create fractals in Amos you simply need a formula, and to pump that formula with numbers over and over until you build up a picture of the fractal in question.
Our Amos Mandelbrot program begins by setting up all the program's basic screen modes and then starts the procedure FRAC to which it passes some variables about the screen size and so on:

## Sereen Open 0,320,220,32,Lowres

Flash Off : Hide on : Curs 0ff : Cls 0
Pen 2 : Paper 0
This loop sets all the variables and then activates the proc

$$
\begin{aligned}
& 00 \\
& x=320 \\
& y=200 \\
& l=32 \\
& \text { Cls } 0 \\
& \text { FRAC[x,y,z] } \\
& \text { Yait Key } \\
& \text { Loop }
\end{aligned}
$$

Then we get to the main procedure. All the basic variables are assigned, and these are by necessity floating point variables due to the fractional nature of fractals (fractals are based on fractional dimensions, a unique topological principle):

```
Procedure frac[x,y,l]
CY=% : cx=1 : K=2
IN#=-2.25:XI=0.75:YM#=-1.5:YXA=1.5
```

Having given values to all the variables, we can then start to manipulate them and add more variables with values based on simple sums:

## $H E=(X X A-X N A) / C X: V Z=(Y X E-Y N A) / C Y$

CX and CY are equal to the screen size. Due to the nature of this program, it scans the fractal in line by line, the height and width of the screen is important to when points can be plotted and where the fractal sits on the screen.

Next we have the program loop which calculates the position

## Amos news

Contrary to what other Amiga mags might tell you, Amos Pro compiler isn't out yet, at the time of me writing this anyway. It will however be out on June 17, according to Europress Software.

The new improved and bug-tested Amos Pro v1.12 is being distributed via the usual PD networks and should be widely available by the time you read this.
I hope that Pro is stable now - I'd like to think it's 100 per cent bug tree, but then I suppose what can you say that about? At least now the compiler is out (or at least will be very soon) we can get started evaluating exactly what kind of program Amos Pro really is.

Once you can compile programs you stand at least a moderate chance of producing something serious with It, although I for one won't be trading up filly to the new system just yet.

I can trust my old Amos, it does the job and is hassle free about 98 per cent of the time. Don't get me wrong, I think Pro is definitely the future of Amos, but like most futures it hasn't happened yet.
of the points by doing the sums over and over again so we have two nested loops:

For $A=0$ To $C Y-1$
For $\mathrm{B}=0$ To CX -
 $1 t=0$
which contain this conditional loop, which returns to the label L when R $\ll 4$ and $D<K$.

L:

 If $A \notin 4$ and D<K Then Goto $L$

And finally after a little curb to make sure D doesn't go above the value of $Z$, we actually get to the plotting command. The line scans across the screęn and the colour of the plot changes as the calcula-
 tions decide which part of the fractal are

# Chaos is 

# beauty 

at that point. End the proc and the two loops and you're out of there.


Once you have a formula actually writing a program to plot them is easy. Fractal formulas are easy to get hold of, as most fractal programs are peppered with them.

The plot routine is really nice in this program, so simply strip out the initial values and initial sums from the first few lines of the FRAC procedure and replace them with your own.


Mandlebrots are really easy with Amos

> Phil South jumps on the fractals bandwagon and shows you how to make them using Amos

> Invent your own
> I feel in a party mood, so how about a little competition? Write me a fractal program in Amos, 2D, 3D anything you like, and send it in to me.

> The best one will be put on the CoverDisk accompanied by a blow by blow in the Amos Almanac. Usual address, mark your envelope FRACTAL COMPO.


Have you thought about buying either Pagestream or TypeSmith? Want to see if these programs are suitable for you? Well, what are you waiting for? Here's your chance...try the demos!

## AWARD CONSTRUCTION KIT

Award Construction Kit offers Amiga users the ability to easily create customised awards and certificates. ACK comes complete with 6 different headline fonts, 8 body text fonts, 5 seals and 11 different borders along with 50 pre-defined award styles. All of these can be edited and mixed to suit your individual needs. ACK also offers the ability to save frequently used user styles.
The program will work on any Amiga and has an excellent "point and click" user interface which has intentionally been designed to be simple to use. ACK is a modular programme, which gives users the ability to add new fonts and styles easily from additional ACK data disks, which will be available soon. ACK is available exclusively from E.M.C., and for a special introductory period the program is available for:-


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Tam one of those music freaks who likes to make up compilation tapes of favourite tracks from several albums. I've always used one computer program or another to produce inlay cards for tapes, but in the past they've always been simple - and very boring - text-based ones.
With the acquisition of a colour printer I thought this would be the ideal time to spruce up the collection, so I set about DTPing my inlays. As there was a considerable number, I chose a simple design which could be produced quickly, while at the same time giving enough flexibility to individualise each inlay.
ProPage was used for the design, but you could just as well use PageStream or PageSetter3. I considered creating a ProPage page genie to automate the job, but in the event there was no need.
The first things to fix are the overall dimensions and basic clements. My inlays have a backflap that can be read through the window on the rear of a cassette case, a thin spine, a front cover or face, and an inside flap that folds into the case for a more detailed listing of what's on the tape.
The overall dimensions are 16.5 cm wide by 10 cm high. To provide room for cropping marks on the printout - they make it easier to cut out the inlay accurately - increase the page size by 1 cm in both directions to 17.5 cm by 11 cm . Turn the Snap to Grid feature on and make the grid 0.5 cm square.
Create a box 16.5 cm by 10 cm and position it 0.5 cm in from the left and 0.5 cm from the top of the page. If the inlay is to have an overall background colour, this is the box to shade.
Before we go any further, let's place the crop marks. From the top left corner of the box you have just created draw a 0.5 cm line to the left of the page, and another to the top Repeat this for all four corners. When the inlay is printed you will be able to line up your ruler with these marks ready to run the knife along.
The backflap is the next job. Create a box 2.5 cm by 10 cm and position it exactly over the left-hand side of the large box. The backflap is where you will list all the names of the tracks and artists on the tape.
Now there needs to be a fold between each of the elements of the inlay - backflap, spine, face and inside flap - and Ive allowed 0.1 cm for each of these. So the left-hand edge of the next element, the spine, will be positioned 0.1 cm to the right of the right-hand edge of the backflap.
Create a box 1.2 cm by 10 cm and position its left edge at 3.1 cm . On the spine will go the title of the tape. This will be printed sideways, so when you are ready to do that part of the inlay create a box 10 cm by 1.2 cm , type in the text, rotate it by 270 degrees, and place it into position over the spine element (PageSetter3 doesn't allow rotated boxes, so if you are using this program you'll have to come up with another idea).
Now for the face. Create a box 6.4 cm by 10 cm and position its left edge at 4.4 cm (the top edges are at 0.5 cm , by the way). On the face will go the title of the tape plus a graphic to indi-

## PUBIISHIING

vidualise it. It's often nice to make the background colour of the face different from the background colour of the other bits. Up to you.

Finally the inside flap. This box is 6.1 cm by 10 cm , and its left edge is positioned at 10.9 cm . The right edge of this box should be exactly on top of the right edge of the big background box we drew to start with. On the inside flap will go a more detailed listing of tracks, artists, publishers, playtimes, and so on.

And that's it. All you have to do now is the fun bit - fill in the elements with the relevant details, print it, cut it out, and gently score three folds between the four elements. Obviously the thicker the paper you print on to, the more robust will be your inlay
Blue Peter eat your heart out.


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> You need this software if you own a printer. CU Amiga, May 1993
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Devised as an enthusiast magazine rather than a consumer magazine, Just Amiga Monthly looks at things from a different angle. We're more interested in which is the best software and hardware than the cheapest, in how it actually works than how it says it works in the manual.
Edited by Jeff Walker, the person everyone in the UK turns to for help with desktop publishing, word processing and printing problems on the Amiga, JAM is the country's leading authority on these subjects. many other topics are covered regularly, including comms, hardware, graphics and sound, in articles written by real Amiga users with the time to get it right as opposed to "journalists" on tight deadlines, who often miss important details.

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A1200 68030 accelerator card with space for extra RAM and FPU Supplier: Silica Systems Phone: 081-309 1111 Price: \(£ 299\) (0Mb) 4Mb SIMM: \(£ 141\)
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1t is one of the most significant facts about the early A1200 market that a host of third-party manufacturers rushed immediately upon the machine's release to produce FPU/RAM expansions and accelerator cards.

With the machine's potential as a graphics and multimedia workstation limited by its lack of co-processor and slowish 68020 CPU , manufacturers on both sides of the Atlantic dashed to be the first to soup it up.
The result us that little more than six months after the A1200's launch, the ambitious owner has a choice of several FPU and RAM expansions with a crop of 68030 and SCSI boards on the way.

Of the more powerful cards being developed, GVP's A1230 has reached the Amiga Computing offices first, beating the Microbotics VXL1 1230 and ICD's Viper by a length, so we decided to test just how close the lowly A1 200 can come to its bigger brother.

Designed as a fairly standard 68030 board and utilising techniques taken from the A530 to squeeze more power into a smaller package, the A1230 is a small card with space for CPU and FPU socket, and two SIMM slots. GVP claim the latter will enable the board to be upgraded to 32 Mb , but few users will require or have funds for anything more than 8 Mb .

Provided that 16 Mb SIMMs can be found and eventually fall in price, 32 Mb is a possibility with this board, but most users will no doubt settle for less.

As with the A530, a 40 MHz 68 EC 030 chip provides the

## mem

Thirty
With the addition of GVP's latest accelerator, the A1200 comes of age...

power, and the FPU socket will accept a 40 MHz 68882, so the fully equipped A1230 machine will be capable of blowing away any A3000 or A4000/030.

Our review unit wasn't fitted with a 68882, so we were unable to carry out floating point tests, but there is no reason to believe the A1230 will be any slower than, say, a 40 MHz combo card with FPU.
Tested against an A4000/040, the limitations of the 68030 chip showed up, with the board less than half as fast in even its best tests, but this
is only to be expected. In tests against a GVP 33 MHz 68030 combo and a standard 25 MHz A 3000 , the A1 230 wiped the floor with the opposition, its significantly faster clock speed giving it an advantage in every area.

The AGA chips help in tests such as WritePixel, which depend mostly on the graphics chips, but this really only serves to highlight the power of an AGA Amiga with a beefy processor in tow.

Retailing at $£ 299$ with no RAM, and about $£ 440$ with a 4 Mb SIMM, the A1230 is capable of boosting the A1200 way over the head of the A3000, and at this price, it is bound to do well, though the surprising early popularity of the A4000/030 might dampen the A1200 68030 card market in months to come.

## The Playroom



This is one of the best presented pieces of educational software on the market. Inside the colour box are two disks, a manual, some colouring pencils (more later), the copy protection sheet, a registration card and a set of stickers which can be attached to the keyboard as your child is learning what to do - very nice indeed.

The manual is extremely well pitched and presented. As well as containing clear and concisely presented information on using the software, it also contains various exercises and extra bits and pieces to be used in conjunction with the software to squeeze that little bit more out of your investment.

What better way to show that you wish to give the very best value for money for your products than to
include a set of colouring crayons and a colouring book-style selection of characters and activities in the back of the manual?

The game is set, Fun School-like, in a world where the child explores by clicking on anything that interests him or her. However, unlike Fun School there is no difference between the environment and activities - you click on something that interests you and use it, returning to where you left off afterwards simple.

It is advisable to install this program onto your hard drive, as the disk prompt will pop up every now and then when the child selects an object or activity - not conducive to keeping attentions focused where they should be.

To give a feel for what the software is about, I'II look at a few of the activities on offer.

Clicking on the computer lets the child play a letter recognition game, where the "computer" asks the child to type in a letter, or select one using the arrow keys, to match that which is on the screen.


The parent can make this more challenging by switching the case, altering the level of testing and choosing words to be spelled, all by selecting the parental use control panel. A more conventional activity is the

## Power XL Drive

1.76 Mb high density external floppy drive Supplier: Power Computing<br>Phone: 0234843388<br>Price: $£ 129$

In development for almost two years, Power Computing's XL floppy drive at last hits the streets this month, and becomes the first drive of its kind to offer every Amiga user the same storage capabilities as enjoyed by A4000 owners.
Formatting HD floppy disks to a capacity of 1.76 Mb , the XL drive doubles up on capacity and makes possible the reading of 1.44 Mb PC and Atari formats.

Installation, as one would expect of a floppy drive, is painless and quick. The user simply boots from the supplied disk and chooses to carry out either a hard drive or floppy installation, then reboots his or her machine, at which time a patch program will run at the beginning of the startupsequence to insert the operating system patch, thus forcing Workbench to write HD floppies.

If the patch program installation is not used or, as in the case of a commercial game which boots from its own custom disk, cannot be activated, the drive will act as a standard 880 k drive for writing purposes, though the system will still be able to read HD disks of either 1.44 Mb (PC and Atari) or 1.76 Mb (Amiga) capacity.

However, it is when the drive is fully set up and used under Workbench that it comes into its own. The XL drive accepts

mixed up toy, which is a character containing three parts - a head, a body and legs - which are - you've guessed - mixed up. Clicking on any body part will swap it for a new one. In time, the child will work out how to create complete characters, encouraging logical thinking as well as playful creativity.

Other activities include the Mousehole, which is a board game involving the child practising his or her counting skills; the clock, which shows what Pepper the Mouse is doing at any time selected by the child; and a favourite of mine - the spinner toy.

This contains two wheels, one with numbers on, one with objects. Spinning, say, the number five on one wheel and an apple on the other will result in five apples being displayed on the screen.

It's simple, fun and very educational, teaching a myriad of skills such as learning to recognise a number of objects without counting them, the whole concept that "five" means "five" whether it's apples or UFOs... and a first lesson in the roulette concept!

Hmmm... This software, as well as being designed for the child, has the guardian or parent very much in mind too, which is partly the reason it stands out.

Parents gain an unequalled amount of control thanks to a Playroom menu on F1 (again, no disable for prying hands) allowing alteration of the case (upper or lower) that the games' text appears in; various levels of numbers and letters to suit various stages of a child's development; the ability to choose between keyboard, joystick and mouse for control; and various printer options.

You can save your preferred settings, meaning that this menu only need be accessed when the child's skills are developing.

The Playroom is excellent. Not as graphically excellent as Mickey's Puzzles, it makes up for this in the breadth of its scope. It's well presented, well written, and contains enough to keep a child happy for quite a while. Above all, it's excellent value. Another winner!
a few seconds slower than equivalent disks on the A4000 internal drive.

IBM 1.44 Mb format takes longer at about four minutes 25 seconds, but this is unlikely to bother those who have previously never had access to the most popular PC disk format.

To compensate, standard Amiga 880 k and IBM 720 k formats take place at a good speed and the drive is almost whisper quiet in most modes.

Probably the XL drive's only drawback is its price, which at $£ 129$ is very high for a floppy drive. In its favour, the XL is at the moment the only HD floppy available for the Amiga and it works very well, but users with no real need for HD will probably stick with cheaper standard drives.

Those to whom the drive will appeal include those who regularly transfer files to and from PC, those who need larger floppies for 24 -bit files or other artwork, and hard drive users looking for a much more effective backup system. To these people, the Power XL drive will be a godsend.

## A 1200 hard drive kit

> 8OMb IDE hard drive with cable and formatting sofiware Supplier: First Computer Centre

> Phone: 0532319444
> Price: $£ 195.99$

Though it is true that one IDE drive unit is much the same as another, it is certainly not the case that one piece of hard drive formatting software is in any way similar to another designed to do the same job.

Since the A1200 was released without hard drive or formatting software, the quality of hard drive kits has varied between the passable, which will prep and format a drive after some painful faffing about, and the downright garbage which simply won't work.

The hard drive kit from First Computer Centre is one of the best so far released, and it's all thanks to an excellent toolbox disk containing software from the experienced American company Microbotics.

RDPrep is an easy to use program which will enable the A1200 user to prep and partition any IDE drive (the unit supplied was a reliable Seagate), which can then be formatted from Workbench in the same way as a floppy.

What struck me as particularly helpful was that the icons for prepping, formatting, and installing Workbench 3.0 to the drive were numbered 1, 2 and 3 to avoid confusion.
All steps towards'setting up the drive are painless and quick, and to top things off, the excellent Commodore Installer program will automatically install the user's Workbench disks to the system partition.

As a bonus, the software checks which version of Kickstart is being used and asks for either the Workbench 2.0 or Workbench 3.0 disks as required.
This is a neat, quick, and simple solution to the hard drive problem for any upgrading A1200 user, though until Commodore release their iron-like grip on the official upgrade path it will remain one which invalidates the machine's warranty.

## StarJet SJ-48 printer

Bubblejet mono printer with optional battery pack and sheet feeder<br>Supplier: First Computer Centre Phone: 0532319444<br>Price: $£ 214.99$

The low end of the bubblejet market has become one of the most fiercely contended peripherals markets of recent years, and since the release of the Canon BJ10, an increasing number of printers have jostled for position at the consumer feeding trough.

The Star $\mathrm{SJ}-48$, in reality a rebadged $\mathrm{B} \mid 10$, makes no pretence to be anything other than a cheap printer with good output, but at its present price it is great value for money.

In the main, the only substantial difference between the Star and the B/10 is that the latest version of the Canon has a larger printer buffer which gives it a speed advantage, but for those on a tight budget the Star's $£ 20$ price advantage will outweigh this.

Options for expansion are identical to the B/10, with an automatic sheet feeder and NiCad battery pack available for the owner with either a heavy print load or a burning desire to be portable.

The tight design of the unit, with its diminutive dimensions and weight of only 4 lbs , makes it a doddle to slip into a briefcase, though we didn't have a look at the battery pack, so can't say how bulky or heavy that might be.

In operation, the $\$ 5-48$ is quiet and fairly quick, turning in a respectable 100 characters per second letter quality text. Roughly translated, an A4 page of mixed text and graphics will print in around three minutes, though a page

of text using one of the two built-in printer fonts will appear in half this time. Print quality is superb for internal fonts and just about as good when using scalable fonts such as Agfa Intellifonts.

The downside of this and most other bubblejet printers is that draft mode is fairly slow compared to a dot matrix and there is no facility for tractor-fed continuous stationery.

Users with requirements for fast draft output - vital when proofing large documents - would find the SJ-48 virtually useless.

Others with letter writing, business, or other correspondence needs can rest assured that the Star SJ-48 is an excellent, low cost printer and a thoroughly good buy.

## SignEngine

## Sign making and cutting software <br> Supplier: Parallel Motion Graphics Phone: 01015199428822 <br> Price: \$559

Possibly the first specific sign making software available for the Amiga, SignEngine is a curious beast combining the talents of a basic layout package with the specific requirements of a program designed to cut shapes and signs from plastic or vinyl using a plotter.

Many readers might wonder of what possible use a program such as this can be, but SignEngine is actually a well targeted response to a solid practical application gap which few Amiga programs have hitherto attempted to fill.

Signs of all kinds from company logos to advertising slogans, posters, and signposts are produced every day on thousands of vinyl cutters worldwide, and the flexibility of being able to generate and cut a sign in the same room cannot be understated.

Exhibition companies who design and erect stands for computer shows, TV companies who need quick production graphics, and many other organisations make regular use of either their own in-house cutter or go to another company for stickybacked output. SignEngine makes it possible for the Amiga to fulfil these commercial needs for the first time.
The program is fairly straightforward in use. No drawing tools are included, so the user must import either a ProDraw clip format or IFF-DR2D structured drawing. Once imported, however, the user has an exhaustive list of controls over the final product.

Using the Arc-weld tool, letters which overlap can be merged, saving a lot of faffing about at the cutting stage, shadows, borders, and outlines can be placed around and below any object with user-definable attributes, and there


SignEngine is a powerful, if expensive, specialist tool
is an auto-tiling feature to enable the production of huge billboard-size designs. More than 50 sign cutter specific controls are included to give the user as much say over how the finished sign will look, including everything from the exotically named Pounce feature to an automatic allowance for vinyl shrinking.

In all, SignEngine, though expensive, offers a great deal more than the existing Amiga packages with HPGL plotter support and opens the way for Amiga infiltration in a very specialised marketplace.

## The 17 Bit Collection

## Double CD compendium of PD software Supplier: Almathera Systems Phone: 081 1-683 6418 Price: $\mathbf{£ 3 9 . 9 5}$

If, as Kelly Sumner recently said, CDTV's time has been and gone, one would expect the software available on CDTV format to decline in both number and quality, but the latest offering from Almathera systems bucks this trend by doubling the number of CDs and halving the quality.

The 17 Bit Collection is made up of a huge number of PD demos, tunes, games, and utilities from the gargantuan vaults of one of the biggest libraries around, and at first glance looks to be an attractive buy. However, when one discovers the price and opens the package, things begin to turn sour.

One entire CD is given over to what is euphemistically titled The Early Classics, in reality a wodge of old demos which ceased to be state-of-the-art several years ago (remember the Red Sector vectorballs?), utilities which are often way out of date, and so on.

The second disk is a great improvement as it offers more recent material, much of which can be very useful, but as a complete compilation this one fails to impress.

To ask $£ 40$ for what is a collection of freely distributable software is to ask too much, and though many users would no doubt buy the second CD on its own, I'd be more than a little gob-smacked if the 17 Bit Collection made its compilers anything approaching a fortune.

## AmivgA

VGA adaptor for machines with Super Denise chip (A500 Plus and loter)<br>Supplier: Advanced Micro Interfacing<br>Phone: 0703511164<br>Price: $£ 39.99$

Touted as a VGA adaptor, the AmiVGA box is a monitor connector for all Amigas, A500 Plus and beyond, which have the Super Denise chip installed, and promises to bring the benefits of non-interlaced high resolution displays to anyone with access to a suitable monitor.

A hardware and software double act, AmiVGA consists of a small black box with monitor ports for both a 15 -pin SVGA connector and the standard Amiga 23 -pin cables. It fits in the Amiga monitor port and its through port allows the connection of two monitors at the same time.

AmiVGA's software is a simple initialisation program running off a floppy supplied with the hardware which, when activated, offers the choice of VGA or CGA screen modes.

## Amiga monitors

CGA, for those not familiar with quaint PC terminology, is similar to the standard Amiga 1084 display, and will enable the user to make use of any normal Amiga monitor.

The VGA driver software survives warm reboots, so the floppy boot disk will only have to be used once per session. Some sort of hard drive-based solution would have been better, but as initialisation is very quick, the floppyphobic (all hard drive owners, in other words) shouldn't suffer too much distress.

In use, AmiVGA was less than trouble-free, and proved incapable of displaying a strong signal on one of the standard SVGA monitors we borrowed for testing. The picture was stable enough and dot pitch appeared high enough
for a sharp display, but despite cranking brightness way up, the little black box's image remained very dark.
Users with Super Denise-equipped Amigas would be advised to give this cheap VGA solution a look, but are advised to check thoroughly beforehand whether the monitor on which they intend to use it will be capable of displaying a decent picture.

Trying to lay hands on Commodore's $£ 30$ adaptor for the A1200/A4000 might be a wiser course of action, though the latter can be incredibly difficult to find.

## Mickey's Jigsaw Puzzles



You'd expect something special from a product with Mickey Mouse and Disney plastered all over the box, and indeed this looks a very slick package from the beginning.

Inside the box are the usual couple of disks, instruction manual and registration card. It's nice to see that the program is hard drive installable - so much Amiga software neglects to allow one to do this, which is especially important with education packages, where the differences in ease of use and speed between a hard and a floppy drive could be the difference between a child having fun or losing his or here patience and/or interest.

Basically the program is what it sounds like - a collection of puzzles ( 15 in all) featuring Walt Disney's favourite cartoon hero. Of course, being done on a computer, there are various twists...

Provided the program is installed to a hard disk, you can see on loading a selection of buttons down
the right of the screen allowing you to choose a puzzle to attempt (floppy owners have to load puzzles from disk when they want them hardly a major chore).

No picture is tied to any type of puzzle. You can select a picture and then decide what type of puzzle you wish it to be.
For instance there's the silhouette puzzle, where you drop darkened shapes into the picture - this teaches children shape skills. Or you can choose normal jigsaw pieces or square bits. You can alsoselect the number of pieces - the range is from 4 to 64 .

The method of actually putting the puzzles together is very simple. You get a piece to start with, drop it where you think it goes, and then the computer automatically "picks up" another piece for you.

You can move two or more puzzle pieces at


once, and control can be by mouse (the easiest), joystick or keyboard, using the arrow keys. There is a timer option so the puzzles can be constructed against a ticking clock, adding an element of fun for the child who has cracked the idea and can do 64 -piece puzzles without much effort given all the time in the world. The added incentive for finishing a puzzle is the ability to animate the completed picture on doing so - what more would you expect from Disney?

Clicking on the little camera which appears when a puzzle has been finished does the business here, and the animations are very good indeed - again as one would expect. This is the bit children will really love, as the pictures are brilliant enough anyway before any movement has taken place.
The function keys offer a good deal of flexibility, and some cheats, too - it would have been nice to have a way of disabling these to force impatient little minds to think instead of taking short-cuts.

## Helpful functions

As it stands, though, F1 will show you where a piece goes, or the entire puzzle, depending upon whether Mickey actually has a piece in his hand at that time; F2 rearranges the jigsaw correctly should you have completed it but got some pieces in the wrong places.

The other function keys concern themselves with toggling the puzzle grid lines, the timer, text messages, Mickey's hand (the cursor), the music, and pausing the game - only necessary if you're jigsawing against the clock, of course.

Finally, it's possible to print the puzzles out, although to do any justice to the quality of these 15 pictures - which are all shown in full colour in the booklet - means that unless you have thousands of pounds for a decent colour laser printer, you're best off admiring them on-screen.

I liked Mickey's Jigsaw Puzzles. It's a non-nonsense program, taking a very traditional infant pastime and adding more in genuine flexibility to it than it removes in lack of simplicity. Recommended.

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Accelerators aren't of any particular use in Amiga animation, but a hard drive certainly is. Large animations, especially if created in HAM mode, will consume huge swathes of disk space and should always be given the freedom of a hard drive to gallop around in.

Memory is also crucial, but only up to a point. The sort of animations created by most animators not using ray tracers are demanding on chip memory (you'll need IMb chip RAM for sure) but usually don't require more than about $\mathbf{2 M b}$ to run in, and a lot less during the creation process.

If the intention is to produce five-minute long demos stretching across three or four floppies, then 4Mb RAM would be better, but for most purposes $\mathbf{2 M b}$ is ample.

## Disney Animation Studio

Coming from the past masters of animation, you'd think this program would be the best around. That it doesn't quite make it to the top of the ladder, however, shouldn't put off the potential animator.

DAS is made up of three programs: One for creating pencil drawings, one for colouring the finished animation, and another for synchronising the anim with sound effects and other clips of animation. In effect, it works in a similar manner to the real animators - a fact that the manual is at pains to point out.

In terms of features, DAS can stand up there with the likes of DPaint, but it is most definitely a non-HAM package designed for cartoon drawings.

The onion skin feature, enabling the artist to see the last three cells through the present cell, is ideal for creating smooth animations, but if you want a spinning logo or a HAM animation, try another package.

As a paint package. DAS does well enough, if not brilliantly, but where it scores very highly is in its dedicated nature. Budding Disney's can learn a great deal about the animator's art from this package, helped by some wonderful Disney demonstration anims, so it is easily the best package for the educational environment.

## Supplier: Entertainment International <br> Phone: 0268 541/26 <br> Price: $£ 79.95$

## Spectracolor

Basically a HAM paint package, Spectracolor was the first of its kind to offer animation, and has a few extra features which help the program to give DPaint a run for its money.

Morphing is one, a feature which Spectracolor boasted many months before DPaint 4 was released, but the brush wrapping is Spectracolor's most unique tool. This enables the user to pick up a brush then "wrap" it around a sphere, cube, or one of the seven basic shapes supported, to produce quire remarkable effects for a program in this price bracket. There are a few draw-


> Put life into pallid .pixels with some of the Amiga's best animation software for everyone from beginners to Walt Disney

backs with Spectracolor, of course, and the main one is that it is HAM only. If you want to produce an eight-colour anim you can, but it will just be an eight-colour HAM anim, which means slow refresh rates and wasted memory.

To add to this, the animation controls are a little difficult to come to terms with, so unless the unique features are desperately required, Spectracolor is best used as a static image generator.

## Supplier: Micro-PACE <br> Phone: 0753551888 Price: $£ 77.54$

## Take 2

A recent product and one which is designed more as an animation finisher than something in which to create the entire anim. For this reason the paint facility is limited.

Instead, the animator creates cells and, more importantly, plans which key cells will be used more than once in another package, then ports them across to Take 2 for editing.

Once the cells are available, Take 2 can go to work on them using its powerful dope sheet and video scripting utilities.

The former enables the correct timing of when a frame will be played and allows the setting up of complex routines to mix and match frames, use them more than once, and generally harangue them into a sequence.

Video scripting enables the correlation of scenes and sequences as one large anim ready to be taped to video.

The most powerful feature of the program, however, has to be its ability to run four-level line tests. This means that the animator can have up to four separate animations going on at once in the same screen, and can edit or cut any one of them at any time.

It is the sort of feature usually found only in professional
packages costing hundreds, or even thousands, of pounds, and could lead to Take 2 making an appearance in commercial studios as a valuable and very cheap line tester.

## Supplier: Rombo Phone: 0506414631 Price: $£ 49.95$

## Animation Station

A package with certain similarities to Take 2, Animation Station manages to sit on its own as an animation editor and special effects generator.

Like Take 2, Animation Station is designed to be used once all animation cells are complete. At this stage, the user loads the sequence into Animation station, and uses the power of the package to combine animations, tack other on at the end. swap frames around, and assign times for the exposure of ind:vidual frames.

Special effects, such as wipes, resizing, scrolling, and others can be added across a user-defined number of frames, making it possible for the user to create professional cuts and edies in a computer cartoon.

Animation Station supports all Amiga resolutions and screen modes, including interlace and overscan, so it is a grear tool for use in conjunction with one of the more traditional paint and animate packages.

## Supplier: Marcam <br> Phone: 0604790466 <br> Price: $\mathbf{8 9 9 . 9 5}$

## Deluxe Paint 4

Though a little slow as a HAM paint package, DPaint has been many things since the release of v 3 , not the least of which is probably the best animation program available on the Amiga. Version four's improvements to the already powerful animation section have simply reinforced the package's position.
Animators can now use a "light table" similar to the Disney "onion skin" to enable the creation of smooth animations, and all animation controls, such as frame advance and add frame. have been gathered together on a VCR-style panel for easier control.

In addition, there is now a morphing feature which can transform one brush into another over a series of frames, and though painfully slow, this feature can be a great aid when animating.

As usual, the DPaint perspective controls and move requester are still available, the latter of which has given birth to countless rotating, tumbling logo animations. As an overall package for the animator, DPaint 4 is number one.

## Supplier: Electronic Arts <br> Phone: 0753549442 <br> Price: $\mathbf{£ 8 9 . 9 5}$

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## Roclite RF382C

If speed and style is what you're looking for the Roclite is the drive of your dreams. Being by far the smallest, slimmest and fastest drive we had on test, it's a suitable opener for the definitive guide to the best in external technology.

At roughly twice the speed of the standard Commodore internal, the Roclite is pretty impressive as well as being near silent. Unlike most of the other drives it Roclite comes in either CDTV black or the usual vanilla.

Again unlike at lot of the competition it comes with anti-click and anti-virus which when added to its pure elegance and speed make it a very attractive buy. If you're looking for a stylish slimline drive that can outpace the opposition and still retail at a respectable price, Roclite is the one for you.

## Price: $\mathbf{£ 6 6 . 9 9}$

Supplier: The First Computer Centre Tel: 0532319444

## Cumana

Cumana drives have been around almost as long as the Amiga and to their credit l'd be surprised is the very first unit isn't still providing sterling service.

Strong, sturdy, reliable, boring, noisy... in fact we're talking the computing equivalent of the Volkswagen Beetle.

If you're not after the whistles and bells of more modern drives but simply want a unit that will last longer than "you will" the Cumana is the perfect choice and dirt cheap to boot.

Price: $£ 57.95$
Supplier: Gordon Harwood
Tel: 0773836781

## Power Dual Drive

As the name suggests, the second offering from Power Computing is a twin drive comprising two PC880B drives within one amazingly small case. Like Power's single drive both the

# mana tilit 

> This month's shoppers' guide looks at the most important addition to any Amiga setup - the essential external floppy...

component units offer anti-click, anti-virus and of course the Blitz copying option.

The drives themselves are totally independent as far as the Amiga is concerned and like all the drives in the roundup through ports and on/off switches are provided as standard.

Unlike all the other available units the Dual Drive also boasts a separate power supply - an extremely useful addition if you're machine is already heavily laden with additional hardware.

It's worth stressing that the anti-virus option does not actually check for a viral presence. Both the single and dual drives simply disable the machine's ability to write information to disk whether that be the Power drive or the internal.

Because of this it's still essential that your disks are write protected where possible. The anti-virus option wouldn't

> If you're repelled by the designer label look, the Zydec drive provides the minimalist appeal and space conscious design that any environmental friendly Amiga user would happily swap his or her 2CV for.

> Although small and amazingly quiet considering the lack of any anti-click hardware, the Zydec does have a few faults in comparison to its more bulky and feature packed opponents.

> Because of the extremely slim

## Zydec

styling, the designers have been forced to add vents on the top and rear of the drive. Although this may initially seem a perfectly acceptable design, the cold light of day or perhaps a cup of coffee could reveal a drawback to placing holes in the top of computer hardware.

In my personal experience floppy drives invariably see more cups than
the average coaster. As a result, one minor spill could be a major disaster. If you're looking for a basic but efficient drive the Zydec is fine, but considering the extra features offered by many of the opposition I must admit it wouldn't be my first choice unless desk space was extremely tight.

Price: $£ 52.99$
Supplier: Evesham Micros
Tel: 0386765500
know a virus if it ran up with a box of chocolates and a bunch of flowers, it simply disables the ability to write data - so don't let your guard down.

If you're in the market for a twin external system the Dual Drive offers a compact, economical and feature packed answer that avoids the power problems often encountered on heavily expanded system.

Price: $£ 125$
Supplier: Power Computing
Tel: 0234843388

## Power PC880B

Now here's a drive that's fit to burst with additional features. Aside from working as a standard drive the unit also boasts an anti-virus mode which immediately write protects all the your floppies by completely disabling the write-to option.

The next feature is a slightly dubious addition which takes the form of a software/hardware copying system entitled Blitz copy. As you might have guessed this isn't meant for normal Amigados copying tasks and that's about a far as we should go with this particular line of thought.

Although rather long the drive still remains surprisingly thin considering the amount of hardware crammed inside - anticlick, Blitz and of course the drive mechanism itself.

As an all-purpose drive the PC8808 has to be one of the best buys on the market especially when its obvious flexibility is combined with a very reasonable asking price. Available in both black and vanilla.

Price: $£ 65$
Supplier: Power Computing
Tel: 0234843388

## Internal exchange

In a break from the external tradition, the final drive in the roundup offers an even more important purchase - especially for those in the somewhat trick position of owning a dicky internal.

For those working exclusively on a floppy system, the lose of the Amiga's essential internal is nothing short of a catastrophe. If the unthinkable happens a fast and reliable replacement is a must.

In such dubious circumstances, Evesham Micros can come to the rescue with a replacement double density drive compatible with the entire Amiga range -including the AI200 and 4000.

Thankfully the installation is a breeze even for the technically inept thanks to very simple and straightforward instructions.

The drive unit is the same tried and tested mechanics found within the Zydec mentioned earlier - as a result, reliability shouldn't be a problem. Simple to fit, reliable and cheap. What more could an ailing Amiga ask for.

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Touch Typist received a 5 STAR review in CU Amiga, Dec 91

## Amiga Shopper Index

If you have back issues of Amiga Shopper magazine then you NEED this program. When was the modification to the Microvitec monitor to allow 4096 colours? Where would you find the review of the Trilogic Stereo Sampler? The answers are Page 113 issue 3 July 1991 and page 49 issue 5 September 1991. All the articles, letters, news items and reviews are cross referenced in a very easy to use package.

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